FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 31—Number 10 | MARCH 7, 1959 | 1 Year $5, 2 Years $8

George Moorhead Heads Ohio Group

By DON E. ROGERS
Feedstuffs Staff

COLUMBUS — George Moorhead, Moorhead Elevator Co., Leipsic, was elected president of the Ohio Grain & Feed Dealers Assn., at the 80th annual convention held at the Neil House, March 1-3. He succeeds A. J. Koppenhafer, Hub Grain Assn., Bowling Green.

Harry E. Huffman, Ada (Ohio) Farmers Exchange Co., was named first vice president, and Carl A. Pitsick, Early Elevators, Inc., Lytle, was elected second vice president.

George Forrester, Forrester Grain Co., Toledo, was reelected corporation secretary, and James Kile, Fred Kile & Son, Inc., Kileville, was renamed treasurer.

G. E. O'Brien, Greenville, was reappointed executive secretary. The following were elected to the board of trustees: Marion Borough, Grand Rapids (Ohio) Farmers Grain Assn.; Nelson Cotton, Ohio Farmers Grain Corp., Fostoria; Elmer Fischer, Minister (Ohio) Farmers Cooperative Ex-

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FEEDSTUFFS *Features This Week*

GRAIN BANK: The basic structure and policy of a feed and grain company's grain bank operation is described on **page 30.**

FEED TECHNOLOGY: Information on handling phosphoric acid in formula feed appears on **page 50.**

BULK FEED: The second in a series of three articles on development of bulk feed handling starts on **page 54.**

PICTURE PAGES: For camera views of the news see **pages 60 and 100.**

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Benson Issues Warning on Turkey Outlook

WASHINGTON — A warning that farmers are heading toward a record large 1959 turkey crop, with attendant low prices, has been issued by Ezra Taft Benson, secretary of agriculture.

Mr. Benson noted that recent reports show the number of breeder turkeys on hand is higher than is necessary to fulfill farmers' stated intentions (as of Jan. 1) to raise 5% more turkeys than the 77 million-head 1958 crop. Past experience demonstrates that under such conditions an even larger crop than that indicated by "intentions" can be expected. It now looks as if the 1959 turkey crop could go over the previous record number of 81 million head raised in 1957.

Turkey hatchings from September, 1958, through February, 1959, were up by about 3.6 million birds, or 28%, from the corresponding period a year ago. Most of this increase—2.6 million birds—has been in the light breeds.

While these hatchings occurred in the seasonally low hatching months, they indicate a level of production which, if not tempered, will result in a surplus of turkeys later this year.

However, Mr. Benson pointed out, there is still time to make some adjustment in these production trends. He suggested substantial early marketings of breeder turkeys.

He added that production of both broiler-fryers and pork will be up significantly in 1959, and that this will mean increased competition for turkeys. Turkey prices during the past two years have been the lowest since the early 1940's.

Need for Meatier Hog Seen By Congressional Committee

WASHINGTON—Proposals for improvements in pork for the benefit of both producer and consumer were presented this week for congressional consideration.

A meatier type of hog is urgently needed in the U.S., says a Congressional subcommittee report, whose author, Jamie L. Whitten, Mississippi representative, noted that members of the subcommittee he chairmans have been "disturbed at the pork marketing system which has led to placing emphasis and premiums on fat hogs."

The study group, whose complete title is Subcommittee on Department of Agriculture & Agencies Appropriations, believes, "Under present conditions such fat is a real loss to the producer and the consumer and, to a degree, to the government. The conversion of surplus corn into surplus fat or lard is no real benefit to the farmer, for the surplus fat results in a lower price per pound at the market place."

In its special report of study on the meat-type hog to the Committee on Appropriations, the subcommittee made note of its thinking that consumers would use more pork if they could buy leaner pork at a reasonable price. The study group also feels that farmers would raise more meat-type hogs if they could obtain fair prices for such animals in the market place.

With these assumptions in mind, the subcommittee discussed the matter with various people and organizations representing the hog production and marketing industry.

Field Trips Made

Members made various field trips in the U.S. and a special trip to Europe to study the problem. Their calls also took them into Canada, where, it was reported, considerable progress has been made in providing incentives for the production of the meat-type hog. These incentives have been given credit for contributing to increased markets and prices for Canadian hogs, especially for A-grade carcasses.

In the U.S., committee members visited meatpacking plants, stock-

(Turn to MEATIER HOG, page 101)

G.T.A. to Build New Mill in S.D.

ST. PAUL—Farmers Union Grain Terminal Assn., St. Paul, has announced it will build a million dollar cooperative feed mill in southeastern South Dakota, probably within the next 60 days.

M. W. Thatcher, general manager of the grain cooperative, said the board of directors had approved "the South Dakota feed mill, with a planned capacity of 500 tons of feed a day, as the first of six modern, push-button type mills which will be built as part of the cooperative's long-range expansion program."

The South Dakota site of the mill has not been selected yet, Mr. Thatcher said, although several communities are on the tentative list of places under consideration. The first feed plant, he said, should be in operation late this summer or early fall. The other five will be built over a number of years, and located in Upper Midwest states.

1957 AND 1958 EGG PRODUCTION SIMILAR

WASHINGTON — Last year's egg production was about the same as in 1957—5,057 million dozen—but, as U.S. Department of Agriculture records show, 1958's egg output was down 3% during the first five months of the year compared to the previous year, and up 4% during the last seven months. Further comparison shows layers on hand during 1958 averaged 301 million, while in 1957 the average was 305 million. Egg production has increased 3% over the past five years. During the same period layers decreased 4%, but the rate of lay went up 7%. The rate of egg production per layer on hand during 1958 was 201 eggs, compared with 198 eggs in 1957, and was at record high levels in all months of the year except February, March and April.

Poultry Group Makes Price Predictions

CHICAGO—The Poultry Survey Committee made these predictions in its recent ninth forecast report:

● Egg prices will be 2@5¢ lower from March through September of 1959, compared to the same period in 1958, and prices for the last three months of this year probably will show no improvement over last year's.

● Net returns to turkey producers for the 1959 crop will range from about the same to slightly less than last year, with lower production costs partly offsetting expected lower prices September through December.

● U.S. farm broiler prices April through June will average 16@17¢. And there will be little or no price rise later this year.

These forecasts were made in Chicago following an intensive two-day deliberation by five leading college economists: Dr. Ralph L. Baker, Pennsylvania State University; Dr. S. K. Christensen, Oregon State College; Dr. William R. Henry, North Carolina State College; Dr. R. L. Kohls, Purdue University, and Dr. Henry Larzelere, Michigan State University. Economists from industry and the U.S. Department of Agriculture serve the Poultry Survey Committee in an advisory capacity.

The report is the result of the first

(Turn to POULTRY, page 101)

Iowa Tests on Enzyme Feeding of Cattle To Be Reported

AMES, IOWA — Results of experimental feeding of an enzyme supplement for fattening cattle will be reported to Midwest cattlemen and feed men at the annual Cattle Feeders' "Hey" Day at the Iowa State College Armory here March 10.

The program at the armory will begin at 10:30 a.m. following a 9 a.m. showing of 235 growing and finishing cattle and 100 breeding cattle on experiments at the beef nutrition research farm northwest of Ames. Dr. Wise Burroughs, cattle feeding researcher, said visitors may come to the nutrition farm first, then move to the armory after seeing the cattle. Experimental results will be posted on the pens.

Dr. Burroughs will present the enzyme report at the opening of the morning program at the armory and will then summarize results with other feed additives, including stilbestrol, Tapazole, tranquilizers, live rumen cultures, chemobiotics and alcohol. The summary will show average results of experimental work with stilbestrol at 20 different agricultural colleges and universities. Up to 15 colleges' work will be summarized for other averages.

A report on how much protein cat-

(Turn to ENZYME, page 101)

FEEDSTUFFS®

A WEEKLY NEWSPAPER

Published by THE MILLER PUBLISHING CO.

2501 Wayzata Blvd., Minneapolis, Minn.

Address Mail to: Box 67, Minneapolis 40, Minn.

Telephone FRanklin 4-5200 - All Offices Serviced by Bell System Teletype

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Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 40, Minn. Single copies 50¢. Subscription rates: One year $5, two years $8, in the U.S., U.S. possessions, Canada and Pan-Americas. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-8. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife, Farm Store Merchandising.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The regional circulation of this issue is concentrated in the southeastern states

In the Front Ranks

ANIMAL AGRICULTURE IS IN THE FOREFRONT of the parade. This is the inevitable conclusion of all who study the vast changes in agriculture on a worldwide scale as well as in the U.S. alone. The livestock and poultry industries have taken some long strides to move up to the front ranks, and there is no doubt that the pace will be quickened as the march continues.

Dr. J. C. Miller, head of the Oregon State College dairy and animal husbandry department, used the reference to the parade in his talk at the recent Oregon Animal Industry Conference. His evaluation of the changes that have come about in animal agriculture, and what has caused the changes, is a valuable contribution to the increasing understanding of future requirements of agricultural science.

DR. MILLER NOTES THAT livestock provides the market for more than 70% of the crop tonnage harvested from all crops grown in the U.S. and the percentage is still increasing. Relating this to food consumption, he points out that it is more than just a coincidence that life expectancy has been raised by 10 years since 1940, while the American diet included a 25% increase in animal proteins. The phenomenal birth rate plus increasing life expectancy insure an increasing demand for livestock and livestock products if we continue to enjoy the same high quality diet in the years ahead, he says.

"Research, both basic and applied, has been largely responsible for the dramatic advancements in animal agriculture. The same forces will be even more potent in shaping the course of events in the future. Full use of the tools already given us by research and technology properly applied to animal agriculture will bring continued expansion and economic benefits for many years. And much greater use will be made of existing techniques at an accelerated pace in the immediate future."

Dr. Miller made these predictions on the basis of present knowledge: Artificial breeding to approach 100% in dairy cattle . . . commercial feeders will pay premiums for stock out of herds of known production . . . breeders will buy stock only when production records are available . . . heritability of factors of economic value will be more accurately determined . . . protein content of milk will replace fat as a selection factor in dairy breeding . . . litters of 9 to 10 pigs will become average . . . dairy herd averages of 10,000 lb. and over of milk per year will become the rule . . . brucellosis, T.B., hog cholera, leptospirosis and many other diseases will be eliminated.

And, significantly, he predicts feed conversion figures now possible under best known techniques will become averages in the foreseeable future. Also, new and revolutionary developments in harvesting and processing forages are just over the horizon.

Dr. Miller asks: "What about new discoveries yet undreamed of? Will they continue to reveal nature's biological secrets in an ever-flowing array of developments leading to improved livestock and more efficient use of feed, labor and capital in the production of higher quality animal products?"

The answer is definitely "yes," he says if (and the "if" is important) basic research in the biological sciences receives the support necessary to provide a challenging and rewarding opportunity for talented young minds. He provided this definition of basic research by Dr. Hans Selye of the University of Montreal: "Basic research is the study of natural laws for their own sake, irrespective of immediate practical applicability—basic research is true discovery, what follows is development—most of the completely new leads are accidental discoveries made by men with the rare talent of noticing the totally unexpected."

THE KEY TO THE FUTURE lies in learning the secrets of rumen physiology, the synthesis of proteins from non-protein nitrogen sources, the mode of action of enzymes and many other puzzles.

"Many unexpected changes in our total animal agriculture picture are in store," Dr. Miller says. "The rate at which they come and the stability of the industry we represent will depend in large measure on the productivity of our research efforts, in tax supported and private institutions and in industry. If the changes in animal agriculture in the years ahead keep pace with the rapid developments in our total society—in short, if our animal agriculture remains strong and vigorous—we must have a steady stream of capable and talented young people in our colleges who are interested in and dedicated to the future of agriculture."

How well industries serving agriculture respond to the challenge to encourage young people in seeking agricultural science careers will be a measure of their understanding and sense of responsibility toward the future parade of progress.

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Feed demand continued about steady this week, although there was a more obvious movement of starter feeds and a general pickup in some areas where inventories had been depleted and were being replaced. Hog feed demand continued to be quite good despite a dropping hog-corn ratio. An improvement in hog prices is predicted after March, ahead of the sharply lower levels seen for fall. Despite an outlook for lower egg prices, it is believed the replacement flock will be as large as a year ago, and this is reflected in good chick starter business. The feed grain index as of March 4 was up 0.7 point to 64.9, while the index of feedstuff prices advanced 1.9 points to 88.3 this week, as against 79.4 a year earlier. (Ingredient prices in detail on pages 102-104.)

Northwest

Demand for formula feeds continued to be spotty during the past week, but the period showed the first general signs of improvement in several weeks.

Feed mill representatives said the improvement came as a result of a steadily growing demand for starter feeds along with an "improvement all down the line." Because the improvement was general for most lines of feed, it was believed that dealers and feeders are replacing their inventories somewhat after operating hand-to-mouth for several weeks. Strength in certain ingredients, millfeeds and soybean meal particularly, was believed to have added to the demand.

Demand for starter feeds generally is showing steady improvement. Pig starter and chick starters, particularly, are moving well for this time of the year.

Prices for the coming week are steady to up slightly. The amount of the increase depends on when mills determine their prices. Some firms figuring prices at midweek missed some of the strength which moved into some ingredients late last week.

Heavy snow in the area late this week stalled trucks and disrupted schedules slightly, but no change in the general picture was expected to result from the weather.

Northeast

There was a little downturn all along the line in formula feed demand and manufacturers shaved their running time. Prices had moved higher and consumers apparently curtailed their buying on the theory that if demand is withdrawn levels will back down.

Egg mashes were about the best sales item. Dairy feeds continued to hold up, with volume centered more in mixing feeds than in complete feeds. Broiler feeds ranked third in demand and some turkey breeding feeds were moved.

The outlook for end products hasn't improved much. Milk and broilers were about unchanged but eggs were weak. Replacements for laying flocks and broilers are above a year ago.

Corn was about the only strong grain, and some of its strength was helped by technical factors.

Corn was up 1 to 1½¢. Feed wheat was off 1 to 2¢, barley was down 2¢ and oats were practically unchanged.

Tallow developed a little stronger undertone but prices held unchanged.

Soybean oil meal fluctuated during the week and both 44 and 50% meal ended $3 to $3.50 higher. Linseed oil meal gained $1. Gluten meal was steady and cottonseed oil meal about steady.

Fish meal continued to weaken and was off $2. Meat scraps held steady.

There was little movement either way in the mid-protein group. Brewers' grains, distillers' grains, alfalfa meal and hominy held about unchanged. Gluten feed was unchanged.

Bran and middlings held about steady, with demand and supplies about equal.

Running time of formula feed manufacturers dipped to an average of about 36 hours last week from 40 hours in the preceding week.

Southwest

Formula feed business in the Southwest was "spotty" this week. With some mills reporting an upswing and others noting a slight slow down, the average is about unchanged from the previous week. This level of business is keeping the mills operating five days, for the most part, but in only a few instances is there any urgency about the pace. Those mills experiencing better business this week doubt that they are seeing a general spring pickup, but rather a replenishing of stocks that have been allowed to dwindle to a low point. Running time ranges from 4½ to 6 days. Backlogs are not large.

Chick starter still has not really taken off, but it is gradually becoming more of a factor. Swine feeds continue to be the best moving line for many mills. Cattle feed demand has dropped off for several mills while it has improved slightly for others. A snowstorm that hit much of the area west and north of Kansas City is expected to bring an upturn in cattle feed demand.

The spring push is generally regarded as being about a week or two off yet. Optimism prevails because of the large numbers of animals in the field.

Prices are expected to be unchanged to down 50¢@$1. However, some types might be up 50¢, depending on when price lists are figured and what the ration contains.

Southeast

Mild temperatures continue to help the growth of pastures. This is having its effect on the dairy and cattle feed business, which is reported on

(Turn to MARKETS, page 106)

how science's latest developments are applied to feed manufacturers' problems...

PETER HAND

puts its research farm to work for you

The illustrated section of the recently enlarged 450-acre Peter Hand research farm contains (counter-clockwise): large broiler house with capacity for more than 10,000 birds; special chick finishing house; unit for mixing experimental rations; storage shed; barn and concreted yards exclusively for swine; farrowing house, its second floor equipped with batteries for starting chicks.

Not shown in photo is a 400 ft. x 50 ft. turkey rearing house and sunporch; pig rearing unit; and cattle barn. The farm, and its research program is headed by Dr. H. S. Wilgus, recognized authority on poultry and animal nutrition.

Among many projects conducted at the farm have been: use of Lipamone in improving weight gains and feed efficiency of poultry; relative effectiveness of antibiotics; observations on control of CRD with vitamins and antibiotics; effect of energy levels on optimum vitamin levels.

You, as a successful feed manufacturer, know that there is no one "magic formula" to cover all needs. But do you have the time and facilities to test and to evaluate all of science's latest findings before applying them to your own practical problems? At Peter Hand we can help you go a long way toward doing this through our continuous experimental program on the Peter Hand research farm.

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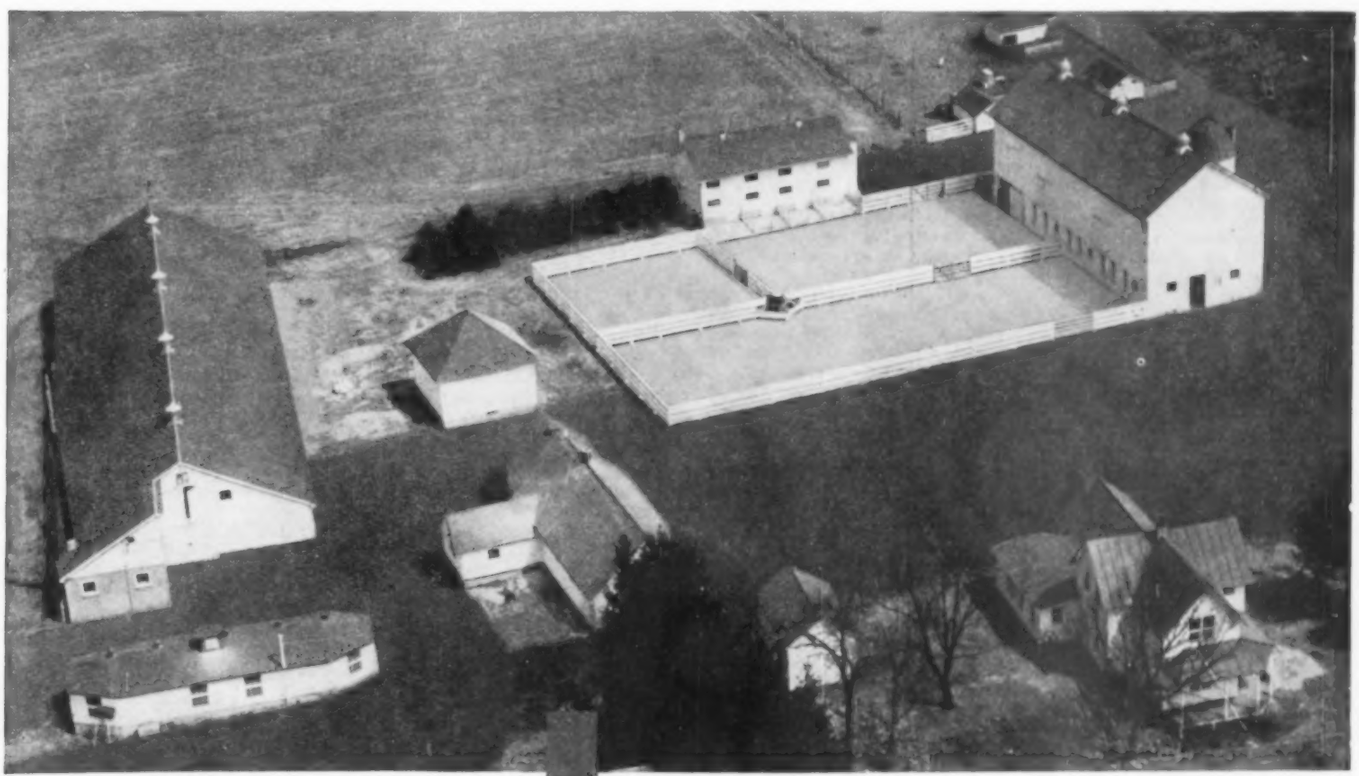

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Turkey Promotion Ban Dismissed

LOS ANGELES — The injunction against the state of California preventing expenditure of any funds from reserves held by the California turkey promotion advisory board has been dismissed, the Pacific Dairy & Poultry Assn., Los Angeles, has reported.

Ellsworth Meyer, presiding judge in the Los Angeles Municipal Court, ruled that the board of directors "was duly appointed and empowered to act in the interest of turkey producers," the Pacific association said. It also was reported that no evidence was found to indicate any nonqualified members or alternates on the present board and the case was dropped with no further inquiries.

Earlier, the Pacific Dairy & Poultry Assn. reported that the injunction, now dismissed, resulted from a complaint by a San Fernando Valley turkey producer, who asked that the court prevent the contribution of approximately $35,000 from the reserve fund to the Eat-Mor Turkey campaign of the National Turkey Foundation.

The injunction had been granted on the basis that the directors who made the decision to allocate funds for this purpose had no legal power to make such a decision. The nine-member board of directors must have a minimum of six directors who are turkey producers; the remaining members may be from allied industries.

Workshop Planned By Feed, Grain Officials

WASHINGTON — A "Washington Workshop" meeting of secretaries and other officials of feed and grain organizations has been scheduled in Washington March 9-10.

A discussion of "The Storage Situation" will open the program on March 10. Speakers will be Clarence Palmby, Ray Pollock and Robert Hanson, all of Commodity Stabilization Service.

Other speakers will be: John Winters, head of the transportation division, Agricultural Marketing Service; John Heimburger, counsel for the House Committee on Agriculture, and Dr. J. L. Krider, vice president of Central Soya Co., Inc., Ft. Wayne, Ind.

During the evening session the program will include a "Meet the Washington Press" presentation. Involved in the program will be Eldon Roesler, publisher of Feed Bag; John Cipperly, Washington correspondent for Feedstuffs; Wayne Darrow, publisher of Farm Reports, Inc.; Charles W. Bailey II, Minneapolis Star and Tribune.

Keith Morrison Shirl Schuster

DIXIE MILLS — Keith E. Morrison, formerly vice president of operations of the Dixie Mills Co., East St. Louis, Ill., has been appointed vice president in charge of sales. Robert F. Deibel, Jr., announced also that Shirl J. Schuster, formerly of Sparks-Waters-Farnen, Inc., will join Dixie Mills as purchasing director. Mr. Morrison has been with Dixie Mills for six years. He was recently elected first vice president of the St. Louis Merchants

TURKEY TALK — Advantage of turkey in a healthful diet was one of the points made by Lloyd Geil (left), general manager, Poultry & Egg National Board, Chicago, during the annual meeting of the Illinois State Turkey Growers Assn. How "Mrs. Weight Control" helps sell more turkey to more customers is being shown by Mr. Geil to (from left), Dr. H. M. Scott, head, poultry division, University of Illinois College of Agriculture; Gerald Bonnett, Bonnett's Hatchery, Havana, association president, and Lew Walts, assistant executive secretary, National Turkey Federation, Mt. Morris.

Future of Turkey Industry Topic at Illinois Meeting

URBANA, ILL.—Immediate future prospects for the turkey industry were described as "very rosy" at the 26th annual meeting of the Illinois State Turkey Growers Assn. by Brad Mason, manager, Produce Terminal Cold Storage Co., Chicago.

He commented before approximately 125 Illinois turkey growers at the University of Illinois that people are eating more turkey than ever before and that he expects heavy tom prices to be good in the fall, but hen prices not so good.

Dr. J. R. Roush, assistant professor, agricultural marketing, University of Illinois, noted that U.S. turkey production has almost tripled over the past 20 years—25 million to 74 million birds — with 43% of this expansion occurring within the past five years. He said increases in population and per capita consumption have been the principal factors affecting this growth.

The increase of about three million a year in population creates a potential market for 16.5 million pounds of ready-to-cook turkey, Dr. Roush said. Per capita consumption of ready-to-cook turkey has increased 1½ lb.—from an average of 4.1 lb. in 1950 to 5.6 lb. in 1958.

Reasons why people are eating more turkey, according to Dr. Roush, include: High levels of consumer income, decreasing price of turkey relative to price of many competing meats, product promotion, quality improvement of the industry toward more consumption from January through October and the marketing of small turkeys or cut-up parts. These same factors, he said, will continue to shove per capita turkey consumption even higher in the future.

Illinois has kept pace with the entire turkey industry, Dr. Roush said, having increased about 33% in the last 20 years. He commented that after the depressing market situation Illinois reduced the number of turkeys grown. "Had the other states followed the lead of Illinois, there would never have been an over-production of turkey," he said.

President Speaks

Gerald Bonnett, Havana, new president of the association, advised turkey growers to be alert to take advantage of changes in their industry. He said hatcherymen must be honest with their customers and must stand behind their product to keep the whole industry healthy.

A fourth member of a panel discussing the future of the turkey industry, Sheldon Swann, Kauffman Turkey Farm, Waterman, association secretary-treasurer, said turkey producers must merchandise continually to keep people eating more turkey. Production must be under good management, he said, and not under irresponsible forces.

Federal inspection in Illinois dressing plants was discussed by a panel consisting of A. C. Enloe, Illinois Poultry Products, Inc., Athens; Dan Sinn, Sinn Brothers Turkey Farm, Tremont; Leo Hager, Hager Turkey Farm, Altoona, and Dr. Boyens, technical supervisor, U.S. Department of Agriculture, Chicago.

All members of the panel said they have approved dressing plants, but no inspection service has been provided. This, they said, has amounted to a financial loss for each individual and has not kept pace with the intent of the law. Either a shortage of federal funds or a shortage of inspectors, or both, the panel said, has been tabbed as the reason or reasons that these plants cannot operate under government inspection.

Comment on Small Plants

There is a basic need in the small dressing plants for assistance from the USDA, Congress and other federal areas to see that the small dressing plants, which are in compliance with the federal inspection law, are not eliminated, according to the panel, "because they are a necessary part of our turkey dressing operation, and it behooves those individuals in responsible positions to see that this type of enterprise exists."

John Ammon, Winslow, was elected vice president, and Howard Kauffman, Waterman, National Turkey Foundation director.

Meeting Postponed

GAINESVILLE, GA.—A meeting of the Georgia Poultry Federation, previously scheduled for March 18, has been changed to March 25, Hulan Hall, federation president, has announced.

The session will be held at 4 p.m. at the Dixie Hunt Hotel. Mr. Hall said the meeting is required so that the entire membership may vote on proposed amendments to the federation's constitution and by-laws. The proposed changes would allow enlargement of the board of directors.

Virginia Feed Group Elects Officers at Nutrition Conference

ROANOKE, VA. — R. T. Harper, Roanoke (Va.) City Mills, was elected president of the Virginia State Feed Assn. at the group's annual board meeting during the Virginia Feed-Nutrition Conference in Roanoke. W. G. Ritchie, J. S. Ritchie & Son, Petersburg, Va., was elected vice president, and W. H. Derr, Ralston Purina Co., Richmond, Va., was named secretary-treasurer.

(A report on the discussions at the feed-nutrition conference appears on page 86.)

New directors named by the feed board are Richard Barnett, Roanoke; Robert Gilliam, South Boston, Va.; Preston Moyers, Broadway, Va.; Elmer Kaylor, Harrisonburg, Va., and Ralph Roll, Richmond. Mr. Roll was elected to a two-year term; the other new directors will serve three-year terms.

At its business meeting the association adopted a resolution opposing a possible sales tax on poultry and livestock feed on the basis that such a tax would constitute double taxation in the event the state imposed a general retail sales tax which would also include feed, poultry and livestock products.

Another resolution commended the Virginia Polytechnic Institute for its establishment of a new department of veterinary science, which will assume the institute's poultry pathological studies, formerly carried on by the department of biology.

Keynote Address

As the keynote speaker of the conference, L. Y. Ballentine, North Carolina's commissioner of agriculture, declared that the real challenge to agriculture posed the supermarket age is the fact that consumers are taking too much for granted in the "ready-to-eat" era.

"Consumers have come to take built-in service too much for granted," he said, "with too little consideration for the costs involved. They do not realize that the modern farmer is in a business requiring a big capital investment, which must pay dividends if he is to stay out of bankruptcy."

He called for a super organization to meet the challenge—an organization to keep before the public the full story of how much it is getting for its food dollar and how many people should have credit for agriculture's achievements.

Animal Fat Prices Show Firmer Trend

Prices for animal fats showed a firmer undertone this week after a sustained period of low prices through the heavy slaughter period.

Exporters and soapers offering 7¢ lb. for bleachable fancy tallow late this week were reported to be finding little response from suppliers.

The firmness results from two factors, it is reported. Heavy marketings are now completed and demand for fats is expected to improve.

Demand from feed manufacturers, who now take about 20% of animal fat production, is showing some improvement and is expected to move up sharply within the near future. Export and soap buying is also expected to continue in steady volume during coming weeks.

One processor said he expects the price to climb ¼ to ½¢ lb during the next 90 days, but to fall off again after July when feed demand tapers.

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SMALL'S DEHYDRATED ALFALFA MEAL

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. . . that it has been necessary to limit new sales of Small's Dehydrated Alfalfa because demand exceeds supply available. Each year the major part of our production is committed by contract bookings for shipment throughout the year, and we are now fulfilling these obligations to our customers. Within a few weeks the new alfalfa production cycle will begin and we can again offer freely the standardized year-around nutritional values that have made Small's Dehydrated Alfalfa the first choice of experienced feed buyers.

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P.O. Box 356 Kansas City 41, Mo.

Chicago Board Outlines Policies On Free Markets

CHICAGO—A policy to guide the Chicago Board of Trade in its "continuing struggle for restoration of free markets" has been announced by Robert C. Liebenow, president of the exchange.

"We must go on record as being vigorously opposed to all programs and policies that result in agricultural food and fiber not clearing through the market. Therefore, basic policy of the Chicago Board of Trade is to: (1) take a more aggressive stand on the elimination of governmental competition and domination of free markets; (2) act as a more forceful spokesman in defense of the private marketing system as opposed to state trading; (3) give open support to farm leaders and farm organizations when those leaders and organizations work for the programs that benefit the private marketing system, and (4) support legislation which will keep the government from acquiring surplus of commodities," Mr. Liebenow stated.

In introductory remarks, he pointed out that: "Despite having, for over six years, a secretary of agriculture dedicated to free markets, the entrenched bureaucracy and self-interest of those who prosper under control have led us further down the road to complete government domination of this important segment of our nation's economy.

"The President of the U.S., in his State of the Union message, indicated that by July 1, 1959, Commodity Credit Corp. would have $9 billion tied up in loans and surplus commodities, and that the carrying charges on this mountain of production would run to $1 billion annually."

Oregon Group Elects District Governors

PORTLAND, ORE.—Two elections have completed the slate of district governors representing the six districts of the Oregon Feed & Seed Dealers Assn.

Reelected to second terms are Myrle Thompson, Thompson Flour Mills, Shedd, Ore., representing the Albany district, and Frank Parsons, Albers Feed & Farm Store, Klamath Falls, representing the southern Oregon district. The Albany group also elected Floyd Packer secretary-treasurer.

Other governors include: Ralph Guynes, Beatie & Guynes, Oregon City, Metropolitan district; Don Hodge, Crabtree Feed, Eugene district; Rudy Smith, Tualatin Valley Cooperative, Washington County district, and Glen Fravel, Jenks-White Seed Co., Salem district.

New governors will assume office at the official meeting of the board of governors March 19, during the association's annual convention in the Multnomah Hotel, Portland.

Fish Meal Producers Change Firm Name

WILDWOOD, N.J.—Haynie Menhaden Products, Inc., Wildwood, producers of the Hi-Seas brand of fish meal and solubles, has changed its name. The firm's new title is Haynie Products, Inc.

Designation of a new name follows the acquisition by Haynie of extensive fish oil research, refining and production facilities in Baltimore, Md. The acquisition, the Menhaden Fish Products Co., expands the Haynie staff of researchers and production personnel and will allow the firm to increase and diversify its marketing program in the fish and fish oil field.

Sherman Bond

CCC APPOINTMENT—The Calcium Carbonate Co. of Quincy, Ill., has announced the appointment of Sherman Bond as technical director of the company. Mr. Bond will work with customers and research organizations on technical problems involving calcium carbonate and trace mineral premixes—the two products produced by the Calcium Carbonate Co. Mr. Bond was most recently manager of the Farm Laboratory Division of the Albert Dickinson Co., Chicago. Before that, he was laboratory director of the Kalo Inoculant Co., Quincy, Ill. He is a graduate of the University of Wisconsin.

General Farm's Spot In Egg Production Topic at Ohio Event

COLUMBUS, OHIO—Two speakers at Ohio's Broiler and Market Egg School expressed their conviction that general farms of the Midwest aren't ready to be counted out of the egg producing business. They contended, before an audience of poultrymen, feed dealers and others, that such operations will continue to produce an important part of the nation's egg supply—despite vertical integration and the trend toward highly specialized farming. They noted, however, that increasing business know-how is going into the management of the egg producing business.

Said Edward Karpoff, U.S. Department of Agriculture poultry authority: "These flocks on general farms will be managed under businesslike conditions that more and more closely approach the management practices of specialized poultry farms."

Dr. Ralph L. Baker, agricultural economist, Pennsylvania State University, referred to general Midwest farms with flocks of 1,000-5,000 hens and said: "Egg production will continue to be a sideline to over-all farm operations, but if these producers use family labor and good quality-control practices and participate in a well coordinated marketing program, they will be difficult to displace."

Mr. Karpoff said the occupational need for heavy work input on most general farms dovetails with the labor supply and work requirements of other enterprises. "The opportunity to share cost items, such as truck and water supply, also means that additional expense on account of chickens is less on general farms than on highly specialized farms where the poultry enterprise is forced to carry the entire farm overhead."

Max Kernan, McMillen Feed Mills, Marion, Ohio, was elected president of the Ohio Poultry Council at the school held on the Ohio State University campus. He succeeds Karl M. Kahler, Ohio Council of Retail Merchants.

Arch McClure Named Quaker Plant Manager; C. R. Martin Retires

ST. JOSEPH, MO.—The appointment of Arch McClure as manager of its St. Joseph plant has been announced by the Quaker Oats Co. Mr. McClure, who has been assistant manager of the company's Cedar Rapids, Iowa, plant since 1955, succeeds C. R. Martin, who is retiring after serving for 22 years as manager at St. Joseph. In his new capacity, Mr. McClure will be responsible for all production operations of the company's second largest plant.

Mr. Martin had been responsible for cereal sales and feed sales in the St. Joseph division, as well as for plant operations. In a realignment of the company's merchandising organization, however, responsibility for sales management and production management have been separated.

G. F. Kerns, formerly assistant division sales manager under Mr. Martin, has been named west central region sales manager with responsibility for cereal sales. Ray N. Ammon will have full responsibility for feed sales as manager of the St. Joseph feed division.

Mr. McClure is a native of South Bend, Ind. He attended Hotchkiss School, Lakeview, Conn., and received his B.S. degree from Yale University in 1943. During World War II he served as executive officer of a U.S. Navy destroyer for three years. He joined Quaker in the engineering department, Chicago, in 1946. In 1949 he was named superintendent of the company's feed mill in Memphis, Tenn., and in 1954 was named manager of the Shiremanstown, Pa., warehouse. He was appointed assistant manager of the firm's largest facility, Cedar Rapids, in 1955.

Mr. Martin joined Quaker in 1925 when the company acquired the Aunt Jemima Mills Co. He had been southern region sales manager for Aunt Jemima Mills since 1920.

Mr. Martin served as general sales manager of Aunt Jemima flour, meal, grits, and feed, and later also took over the sale of Quaker and Aunt Jemima cereal sales in the St. Joseph division as division manager. In 1937 he was named manager of the St. Joseph plant in addition to all sales responsibility for the division.

Mr. Martin has always been active in civic, community and national affairs. He has served on the St. Joseph City Council, as a director of Millers National Federation, director and president of American Corn Millers Federation, Washington member of OPA advisory committee for corn millers during World War II, director and member of the executive committee, as well as past president, of the Associated Industries of Missouri, director of St. Joseph Chamber of Commerce, and a member of the board of trustees of William Jewell College, his alma mater.

Mr. Martin is a director of the Missouri Pacific Union Terminal Railway Co. and a director and vice president of the Empire Trust Co., St. Joseph, with whom he will be actively associated after April 1.

In retirement Mr. Martin plans to devote considerable time to his 400-acre farm north of St. Joseph. Here he annually raises 100 registered Hereford cattle and 1,000 meat-type hogs, along with crops.

Mr. Martin and his wife, Elizabeth, will continue to make their home in St. Joseph. A daughter, Mrs. Allen Schreiber, also lives in St. Joseph. A son, Jack R. Martin, resides in Meriden, Conn.

WARNING ISSUED ON APPLE POMACE

AMHERST, MASS.—The Massachusetts Feed Control Service, Amherst, has issued a warning that it will sample for DDT content all lots of dried or wet apple pomace found being sold as dairy feed. If amounts of DDT found warrant it, cases will be referred to the division of food and drugs, Massachusetts Department of Public Health.

According to the warning, George A. Michael, director, division of food and drugs, said all lots of apple pomace with excess amounts of DDT will be seized, and that any milk containing DDT will be seized also.

Recently the Feed Control Service sampled two lots of dried apple pomace. One lot contained 56 ppm. DDT, the other, 55 ppm. "If apple pomace with this amount of DDT is fed to dairy cows, DDT will appear in the milk," the Feed Control Service said.

Fred Tunks

JOINS FEEDSTUFFS — Fred Tunks has joined the editorial staff of Feedstuffs, it has been announced by Milton B. Kihlstrum, president of the Miller Publishing Co. For the past four years Mr. Tunks was editor of the Monticello (Iowa) Express, a semi-weekly newspaper. Previously he was employed as news editor of two Independence, Iowa, weekly newspapers. Mr. Tunks is a 1953 graduate of Iowa State College with a degree in agricultural journalism.

N.Y. Bill Pertains To Sale of Drugs

ALBANY, N.Y.—Bills relating to agriculture and marketing that have been introduced in the New York State Legislature include one pertaining to feed stores and hatcheries, as follows:

". . . to make it lawful for registered feed stores and hatcheries to use the title, 'registered feed store' or 'registered hatchery'; to possess drugs and medicines for admixing with poultry or animal feed registered by the state Agriculture Department as suitable for sale; to sell such mixtures and vaccines for immunizing poultry against disease and preparations for treatment of animal and poultry diseases, with certain exceptions; provides for registration with State Education Department (S-2685, by Brydges)."

North Carolina Grain School Is March 9-13

RALEIGH, N.C.—The seventh annual statewide grain school for grain buyers and producers, flour processors, feed manufacturers, corn meal processors and grain storage operators will be held here March 9-13 under the sponsorship of North Carolina State College.

Thirty representatives from the grain industry, state and federal agencies, and college professors will participate in the program.

The final day's sessions will be held with the North Carolina Grain & Feed Dealers Assn.

Colorado Group Elects Officers

DENVER, COLO — J. S. Parker, Wray, general manager, Farmers Union Co-op Elevator Co., was elected president of the Colorado Grain, Milling & Feed Dealers Assn. at the 35th annual convention of the group here this week.

James W. Rawson, Burlington, was named vice president, and D. W. Eriksen was reelected executive secretary.

Clarence L. Miller, assistant secretary of agriculture, told delegates present government farm price support programs are "obsolete and unrealistic." He said, "The present system of price supports hasn't benefited the small farmers to the extent it has the large producers. It costs more than $2 million a day now just to store and pay interest on the nation's huge surplus farm commodities."

Eldon H. Roesler, Milwaukee, Wis., publisher of The Feed Bag, spoke on "merchandising morals." He urged members to practice tolerance in "hiring the best man, regardless of his religion, getting along with competitors and being nice to people."

Honeggers' & Co. Sets All-Time Sales Mark

FAIRBURY, ILL. — An all-time sales record was set by Honeggers' & Co., Fairbury, in February, according to E. F. Dickey, president, who announced that total dollar volume increased 133% over the same month a year ago.

Mr. Dickey estimated that total sales for the year ending June 30 will exceed $18 million. He reported that total sales for the first eight months of this fiscal year equalled the volume for the entire 1957 fiscal period and are only 10% below the entire 1958 fiscal year.

Sales of Honegger layer chicks through Jan. 31 were 73.8% above last year's volume for the same period, said Dr. George Godfrey, vice president and executive director, Honegger breeder hatchery division, Forrest.

J. P. Parks Founder Has 65th Birthday

KANSAS CITY—In celebration of his 65th birthday, Jerome P. Parks, J. P. Parks Co., Kansas City, was host to 40 friends in the grain and feed trade at a luncheon at the Muehlebach Hotel Feb. 27.

Mr. Parks, a native of Kansas City, started in the grain business at the age of 19 on the Kansas City Board of Trade, later moving to Salina. He founded the J. P. Parks Co. in 1925 and, specializing in millfeed, became a member of the Kansas City Board of Trade in 1931 when millfeed futures were established.

Building of Ralston Plant on Schedule

OTTUMWA, IOWA — Pouring of the foundations for the Ralston Purina Co. plant in Ottumwa has been 90% completed, according to Bill Netzela, Tunnicliffe - Mac Donald Construction Co. The million dollar construction project is proceeding on schedule, he said, with completion date set for September.

Eight 2,500-bu. soft stock storage tanks will be mounted high in the main building. In addition, the plant will have six 6,000-bu. grain bins and other huge tanks.

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633 Board of Trade
KANSAS CITY, MISSOURI

Broiler Placements, Egg Set Increase

SALISBURY, MD. — Another increase in broiler egg settings and broiler chick placements was reported in the nation's 22 leading broiler states last week as the price slid a little more than 1¢ lb. in Delmarva.

Settings for the week were 49,680,000, 1% more than the previous week and 21% over the same week of a year ago. Nine of the 22 leading states reported increases.

Growers in the 22 states started 33,787,000 chicks, 2% more than the previous week and 12% over the corresponding week a year ago. Increases were reported in 13 states.

In Delmarva last week, the price for broilers purchased on the farm dropped to 17.30¢ lb. from 18.66¢ a week earlier. A year earlier the price was 21.95¢, according to the Maryland-Delaware crop reporting service.

The price range at farms in some of the major producing states as reported March 3 by the U.S. Department of Agriculture market news service in Atlanta showed the following: Georgia, 15@16¢; Alabama, 15@16¢; Virginia, 16@17½¢; Mississippi, 15@16¢; Arkansas, 14@15½¢; North Carolina, 15@16¢.

Delmarva growers sent 3,216,000 broilers to market during last week. This was 6% more than the previous week and 5% more than the corresponding week of 1958. Marketings were 89% of the number of broilers started nine weeks earlier. This is an indication that some growers were holding, hoping for better prices, or had moved the birds on the market the previous week.

For the month of February, the average price paid in Delmarva for broilers was 18¢ lb. compared to 21¢ for February, 1958. This was a decrease of 14%. Feed costs for February rose 6% over the same month a year ago, $5 compared to $4.70. Broiler chick prices at 11¢ in February were 19% less than February a year ago. Lower broiler prices and a higher feed price put more of a squeeze on growers this year than for the same month of last year.

Raymond Bag to Make Stretchable Multiwalls

MIDDLETOWN, OHIO—Raymond Bag Corp. will soon start production of multiwall bags made from a new patented stretchable paper.

J. R. Clements, president of Raymond, stated that the parent company, Albemarle Paper Manufacturing Co. of Richmond, Va., has been licensed by Clupak, Inc., of New York City, to install machinery and produce the new paper. The process will be paced in operation on machines at the Halifax Division in Roanoke Rapids, N.C.

Initial production of the new paper will be used in manufacture of multiwall bags at Raymond plants in Middletown, Ohio and Richmond, Va. The new paper provides abnormally high stretch characteristics making an extremely tough but flexible multiwall package, Mr. Clements said.

Turkeys Quarantined

SALEM, ORE.—The Oregon State Department of Agriculture has placed under quarantine a flock of turkeys after one bird broke out with ornithosis.

Dr. L. E. Bodenweiser, state veterinarian, said the remainder of the flock shows no visible illness, and that the quarantine was placed on the flock with full cooperation of the owner to prevent movement of any birds from the premises.

Club to Meet March 10

HOUSTON, TEXAS—The Houston Feed Club will meet March 10 at noon for luncheon at the Ben Milam Hotel. Speaker will be Emil Marks, pioneer cattleman of the Texas Gulf Coast area.

VIRGINIA OFFICERS—New officers and directors named by the Virginia State Feed Assn. at its business meeting during the recent Virginia Feed-Nutrition Conference are (left to right): Preston Moyers, director, Broadway, Va.; W. G. Ritchie, Petersburg, Va., vice president; S. E. Aylor, Lynchburg, Va., outgoing president; R. T. Harper, Roanoke, Va., incoming president; Ralph Roll, director, Richmond, Va., and Richard Barnett, director, Roanoke. Not shown are W. H. Derr, Richmond, new secretary-treasurer, and directors Robert Gilliam, South Boston, Va., and Elmer Kaylor, Harrisburg, Va.

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ROLTED OAT FLOUR
GLENWOOD FEEDING OAT MEAL
FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
CRESCENT BRAND PULVERIZED OATS
CORN OATS PELLETS (Corn-Oats)
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
APEX BRAND CRIMPED WHITE OATS
OAT FEED
STEAM ROLLED WHOLE BARLEY
GROUND BARLEY
PEARLED BARLEY FLAKES (Max. 2½% fiber) (steamed processed)
GLENWOOD PEARLED BARLEY
STAR CRACKED PEARLED BARLEY
STEEL CUT WHEAT
ACME GROUND DOMESTIC FLAX SCREENINGS
Millers TO THE FEED TRADE
FRUEN MILLING COMPANY
MINNEAPOLIS 5, MINNESOTA

N. M. Dealers Hold Meeting

ALBUQUERQUE, N.M.—Dale Helsper of the Agricultural Stabilization & Conservation office here, told delegates attending the New Mexico Grain & Feed Dealers Assn. annual convention to expect farm price supports considerably below those of last year. He said billions of pounds of surplus grain owned and stored by the government have forced the cuts.

He cited these figures and comparative prices with last year: Barley, 93¢ bu. in 1958, will be 77¢; grain sorghums, $1.83 cwt., down to $1.52; oats, 61¢ bu., down to 50¢; corn $1.35, down to $1.12; rye, $1.10, down to 90¢.

Encouragement of state grain farmers to shift acreage into permanent grass—which will lie dormant—is progressing, he said.

Mr. Helsper said the government had no firm commitments on what the farm support program will lead to, but he told the dealers it has a "direct bearing" on their business since they figure in all aspects of processing, distribution and sale.

Earlier, Alvin E. Oliver, executive vice president of the Grain & Feed Dealers National Assn., agreed that the subsidy program is costing the government lots of money. But, he added, intensified controls—"more socialism"—in the matter of pricing and production are not the answer.

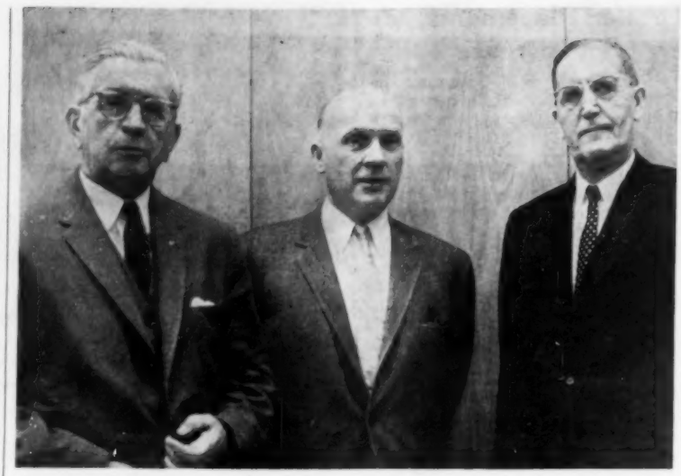
Dr. J. J. Norris, president, New Mexico State University, told the delegates about poisonous plants in the state, with his information directed toward educating dealers in causes of livestock deaths.

Many cattle and sheep men, when they encounter livestock deaths, immediately accuse grain dealers of selling bad feed, Dr. Norris said. Death of livestock from poisonous plants is about 1 or 2% of total herds yearly. But it is a problem which occurs virtually everywhere on the state's rangeland and has been known to cause up to 25% fatalities. He said there are some 100 poisonous plant species.

GMI to Rebuild Plant At Nampa, Idaho

NAMPA, IDAHO — General Mills, Inc., has announced it will rebuild and enlarge its warehouse and feed distribution facilities destroyed by fire at Nampa last December.

Gus Folkman, manager of the operation, said plans are to rebuild the main structure, making it 8 ft. wider than the original one, giving the company a metal-clad structure 80x135 ft. to house the office and provide storage for sacked feed and bakery flour.



ATTEND PFIZER FILM PREMIERE—"Dynamic Careers Through Agriculture," a 28-minute color feature film portraying modern agriculture as the nation's number one industry in which farming is only a segment, was premiered in Minneapolis recently by Chas. Pfizer & Co., Inc., agricultural division. Educators, members of the agricultural press, radio and television and industry representatives attended the showing. Among those attending were Dr. Harold Macy (left), dean of the Institute of Agriculture at the University of Minnesota; Hugh O. Dermody (center), assistant general manager of Pfizer's agricultural division, Terre Haute, Ind., and Dr. A. A. Dowell, assistant dean of the College of Agriculture, Forestry & Home Economics at the University of Minnesota. The movie was made specifically to show high school students the great variety of careers available to young men and women in agriculture. The film is available to any community group or television station in black-and-white, or color.

FTC Affirms Order Affecting Bag Pricing

WASHINGTON—The Federal Trade Commission has affirmed an order requiring 17 of the nation's leading paper bag manufacturers to stop conspiring to fix the prices of multiwall paper shipping sacks.

The order was agreed to by the companies and the FTC's bureau of litigation. It was contained in an initial decision by John Lewis, hearing examiner, which the commission adopted.

The concerns are St. Regis Paper Co., Chase Bag Co., Hudson Pulp & Paper Corp., National Container Corp., International Paper Co., Gilman Paper Co. and Union Bag-Camp Paper Corp., New York; Bemis Bro. Bag Co., Boston; Arkell & Smiths, Canajoharie, N.Y.; Universal Paper Bag Co., New Hope, Pa.; Albemarle Paper Mfg. Co., Seaboard Bag Corp. and Virginia-Carolina Chemical Corp., Richmond, Va.; Ames-Harris-Neville Co. and Crown-Zellerbach Corp., San Francisco; Lone Star Bag & Bagging Co., Houston, and Chemical Packaging Co., Savannah, Ga.

The FTC's complaint of Dec. 7, 1955, charged that these manufacturers used the same pricing formula in order to quote identical delivered prices to customers, regardless of their location or freight costs involved. (Four other concerns also were cited. In 1956, the examiner dismissed the complaint as to Raymond Bag Co., Middleton, Ohio, and Thomas Phillips Co., Akron, Ohio, because they no longer made and sold these sacks; while the charges still are pending against Fulton Bag and Cotton Mills, Atlanta, Ga., and Equitable Paper Bag Co., Long Island City, N.Y.)

The respondents, the complaint said, account for substantially all the more than 2 billion multiwall paper shipping sacks produced yearly. These sacks are used to transport and store feed, fertilizer, cement, sugar, flour and other bulk products.

The order forbids the 17 manufacturers from combining to:

Fix or maintain prices or selling terms, or adhere to any prices or terms so fixed;

Quote or sell at prices determined by any price system which prevents purchasers from securing a price advantage in dealing with one or more of the respondents as against any of the others or any other seller;

Use, circulate, or exchange any pricing formula or lists of zone delivered prices or zone differentials.

The order does not prohibit bona fide agreements between the manufacturers themselves or others to buy, sell, or make sacks where the price or selling conditions are independently determined, offered and accepted.

Nor does it prohibit them from taking such action relating to export sales as would be legal under the Export Trade Act.

The consent order is for settlement purposes only and does not constitute an admission by the companies that they have violated the law.

Gordon R. Ball, Ogilvie Official, Dies

MONTREAL — Gordon R. Ball, chairman of the board of Ogilvie Flour Mills Co., Ltd., Montreal, died suddenly in a Montreal hospital Feb. 28 of a cerebral hemorrhage. He had been in the hospital a week prior to his death.

Mr. Ball, president of the Bank of Montreal, had been on the Ogilvie board of directors since 1953 and was elected chairman of the board following the death of the Hon. Charles Dunning last October. He was a graduate of public and high schools of Toronto and was a prominent financial and industrial leader.

Management Termed "Critical Element" In Elevator Operation

MINNEAPOLIS — Management will be the critical element in elevator operation as on the farm, with operational profits increasingly dependent upon the good judgment and decisions of the operator-manager, according to H. W. Herbison, extension marketing economist at North Dakota Agricultural College.

Speaking before a recent meeting of the Grain Shippers Assn. in Minneapolis, Mr. Herbison said capital investments are high and going higher, but mere possession of capital will not assure success. "In North Dakota, shrinking service price-cost margins make business volume of the essence. There are, in our opinion, two ways to get that needed business volume, (1) out-competing the other fellow for patronage, and/or (2) seriously working with farmer patrons to increase business volume out of the farm business expansion potential of the elevator's patrons," Mr. Herbison said, adding that he favors the latter policy.

The economist presented examples of how farmers can become better patrons through "creative management," particularly the extension of credit, supplied by the elevator manager.

"From this simple beginning in helping patrons to help themselves and the elevator's business volume at one and the same time, a lot of self-instruction in use application of fundamental business management principles gets exercised on the farm and in the elevator's business at one and the same time," the speaker said.

Mr. Herbison said that in this day and age of integration, coordination of production and primary marketing may accomplish near miracles in building firm business volume.

In closing, he stressed size as the keynote in tomorrow's business that "is rapidly adapting to Agri-business the factory system found in other industries. The future suggests a lot closer integration of super farmers, super middlemen and the supermarket in quickly translating changing consumer wants into planned production, processing and distribution of the nation's foods."

Cuba Boosts Domestic Molasses Requirement

NEW ORLEANS — Cuba has announced plans to increase the amount of 1959-crop blackstrap molasses reserved for domestic use, according to a report from the Foreign Agricultural Service.

A recent decree calls for 110 million gallons for domestic use, compared to 96.6 million gallons authorized and 71.2 million gallons actually sold for such use through Dec. 31, 1958, the FAS said.

The FAS report said the larger quantity suggests that Cuba may be considering re-establishing a former requirement that all locally-produced gasoline be mixed with alcohol made from blackstrap molasses.

If Cuba attains the objective of 5.8 million Spanish long tons of sugar during the 1959 season, more blackstrap is expected to be produced than the 230.7 million gallons in 1958, according to FAS. Molasses produced in excess of that decreed for Cuban domestic use will be available for sale for export.

ROUNDS OUT UNIT

MINNEAPOLIS — Don Swanson, Blomfield-Swanson, and Mrs. Swanson are the parents of a new son born March 4. The new arrival rounds out the third unit of young Swansons, joining three sisters and two brothers who arrived in girl-boy sequence. Mr. Swanson reportedly is claiming credit for this orderly system of balancing the family.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending:	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
December 27	1,185	601	714	743	138	665	1,692	1,852
January 3	1,211	669	873	772	149	685	2,046	1,840
January 10	1,180	531	784	737	136	765	1,880	1,838
January 17	1,251	532	570	657	182	732	1,797	1,688
January 24	1,274	607	753	730	109	723	1,978	1,746
January 31	1,280	576	709	639	174	738	2,111	1,741
February 7	1,286	648	778	613	120	800	1,837	1,902
February 14	1,272	668	724	744	130	848	2,063	1,776
February 21	1,229	606	737	877	168	865	1,769	1,967
February 28	1,154	601	843	816	176	829	1,927	1,814

Week ending:	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
December 27	1,090	562	2,081	321	5,404	211	2,366	1,946
January 3	1,014	601	2,578	324	5,862	298	2,871	1,999
January 10	1,092	557	2,407	323	5,744	255	2,904	2,051
January 17	1,016	437	2,207	320	5,825	205	2,766	1,944
January 24	1,058	537	2,346	290	5,742	198	2,884	2,025
January 31	1,101	532	2,681	316	5,943	178	2,964	2,059
February 7	1,094	572	2,721	363	6,233	236	3,104	2,046
February 14	1,168	580	2,870	404	6,270	205	3,263	2,109
February 21	1,129	586	2,903	373	6,419	239	3,202	2,302
February 28	1,269	700	3,021	360	6,626	246	3,228	2,308

Week ending:	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1958-59	Total 22 areas 1957-58
December 27	3,122	390	2,105	258	238	861	28,555	25,293
January 3	3,306	477	2,277	269	236	1,052	31,409	26,741
January 10	2,881	440	2,223	310	300	1,196	30,534	27,033
January 17	3,073	430	2,079	284	309	1,226	29,545	26,816
January 24	2,998	397	2,227	342	274	1,118	30,356	28,539
January 31	3,172	433	2,136	385	205	1,108	31,181	28,826
February 7	3,044	396	2,127	339	240	1,074	31,573	29,209
February 14	3,276	412	2,214	382	215	1,163	32,756	29,495
February 21	3,377	511	2,242	393	234	1,138	33,258	30,253
February 28	3,392	509	2,178	343	283	1,164	33,787	30,270

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New Iowa Swine Nutrition Findings, Suggestions Outlined

By Special Correspondent

AMES, IOWA — About 1,600 Iowa swine producers may be asking more fundamental questions of their feed salesmen in the next few months as a result of their attendance at the Swine Production Conference at Iowa State College Feb. 25-26.

This conference, this year, replaced the Swine Producers Day which has been held annually at the college for nearly 40 years. The attendance for the two-day event came close to matching the largest crowds ever to attend the Producers Day—including those in the times when the old Trinity Mix set up the first Corn Belt "revolution" in swine feeding.

The difference between this conference and other swine producers days was the fundamental nature of the information the farmers received. Specialists didn't say or show "how-to-do-it." They discussed "why." They presented a program that integrated feeding with management, housing, disease control, breeding and marketing. They went beyond the idea presented in past years that a hog producer, to succeed, must buy a feed program instead of a "bag of feed." The story at Ames was that the whole production program has to fit together to pay.

Feed Topics

Least-cost rations under present hog market and outlook conditions were emphasized at the conference. And the opinion was expressed that "new antibiotics are appearing which may replace some which seem to be 'losing' their growth-permitting effects in swine feeds." Another point of comment was the belief that a higher protein level in feed can produce a meatier hog.

Producers and feed men on hand also were told of tests which showed that sows on a "high-low" system farrow more live pigs, that thyroprotein aids sow milk flow, that pig anemia can be controlled with iron-dextran complex injection and that fresh feed produces faster gains than stored feed.

Facts were provided to help producers make decisions involved in the construction of houses for confinement rearing of pigs and in ventilating and heating swine production buildings.

Choice of Market Important

Dr. Ralph Durham, Iowa State swine marketing specialist, pointed out that the dollar made by wise feeding can be lost in the choice of a market for the pigs. He showed producers how to calculate beyond the base price the buyer assigns to their lots of hogs, to evaluate it on the basis of the individual weights of the hogs and use the result to select the market where they will sell today—and the marketing method they will use.

Dr. L. N. Hazel, professor of animal husbandry, explained why the breeding program a producer uses must be fit to the housing and management situation. Dr. Hazel suggested that under good confinement programs producers can alternately cross American breeds and bacon breeds. But on a good pasture production program he would use only a three-breed rotation, dropping one of the bacon breeds. He would use no bacon breeds for programs in which the pigs glean corn fields, follow cattle or are otherwise under stress.

Life-Cycle Feeding Program: Special interest in least-cost rations under present hog market and outlook conditions was emphasized by Dr. Vaughn Speer, nutrition specialist, in his discussion of the life-cycle swine feeding program.

He said recent research indicates the desirability of complete rations for growing-finishing pigs if maximum control over nutrient intake and cost is to be exercised. It is in the growing-finishing period that the producer needs to know the exact rate and cost of gains he is obtaining.

The important thing, Dr. Speer said, is for a producer to know the rate and cost facts about his operation during the growing-finishing period, whether one uses complete rations or feeds grain and supplement free choice.

Continuing research, he said, has indicated new savings in vitamin-mineral premix and antibiotic requirements in a life-cycle feeding program. Using the least-cost complete ration feeding system, he said, a vitamin-mineral additive premix starts at 100 lb. per ton of feed for pigs weighing 50-75 lb. However, Iowa State College researchers say it can be profitably dropped to 75 lb. per ton for hogs weighing 75-150 lb. and 50 lb. for pigs weighing 150-200 lb.

The change in the antibiotic recommendations calls for elimination of antibiotics from pregestation and gestation rations, giving the sow 50-100 gm. antibiotic per ton of feed during farrowing and lactation periods, giving the pigs on prestarter and starter 100 gm. per ton of feed and cutting the antibiotic 50 gm. per ton for the growing ration fed to pigs weighing up to 50 lb.

For growing-finishing rations for pigs weighing more than 50 lb. no antibiotic is needed where the farm disease level is low and no more than 20 gm. per ton of feed is needed even where the disease level is high, according to Dr. Speer.

Antibiotics: Dr. Virgil Hays, nutrition researcher, said resistant strains of bacteria have developed in places where the same antibiotic has been used for several years. He said the antibiotics commonly used in swine feed "appear to be losing some of their effectiveness and this is often attributed to resistant strains of disease organisms having developed." Dr. Hays told swine men this does not mean that the benefits of antibiotic feeding have to be abandoned. "New" antibiotics may be able to continue the beneficial effects, he said. Iowa State College researchers have been experimenting with one of these, oleandomycin, in baby pig rations and in growing pig rations.

They reported that 1¼ milligrams of oleandomycin per pound of feed for pigs weaned at two weeks of age resulted in 13.2 lb. gain per pig compared to 10.1 lb. in the control lot—without oleandomycin—in a 28-day trial. Five milligrams raised the gain to 14 lb. and 10 mg. raised it to 14.6 lb. The 2.5-mg. level of oleandomycin gave about the same gain increase as the 1.25-mg. level, but raised the feed efficiency higher than any other level except the 10-mg.

For growing pigs from 29 to 78 lb., 2.5 mg. oleandomycin per pound of feed increased daily gains from 1.16 lb. for the control lot to 1.26 lb. for the oleandomycin lot. This level also resulted in producing a pound of gain with 2.6 lb. feed as compared to 2.82 lb. feed for the control lots. Higher levels did not increase daily gains further, but the 5-mg. level cut feed requirement per pound of gain to 2.52 lb.

There is also a prospect of copper sulphate as a replacement for antibiotic in permitting faster growth and better feed conversion for pigs, according to Dr. Hays. The Iowa researchers tried copper sulphate in the feed of growing pigs from 33 to 94 lb. weight.

They used levels of 1, 2 and 3 lb. copper sulphate per ton of corn-soybean meal type growing ration. The 2-lb. level in tests with 96 pigs raised daily gains to 1.44 lb. pig as compared to 1.32 lb. for the control ration without copper sulphate. It reduced feed requirement per pound of gain from 2.79 lb. on the control ration to 2.66 on the copper sulphate ration.

"High-Low" Feed System: Nutrition researchers increased the average number of live pigs per litter more than 12½% by limiting protein and corn for sows until three weeks before breeding and during the first two thirds of gestation and increasing these elements during breeding and the last one third of pregnancy in experiments at Iowa State.

Dr. Hays pointed out that it is important to keep sows and gilts from putting on too much finish before they are bred. This helps them to ovulate a large number of eggs and implant a high percentage of these eggs so they develop into vigorous pigs.

Sows and gilts receiving a constant level of feed before and throughout the gestation period averaged 10.3 live pigs per litter. Those receiving the high levels of feed only at breeding time and the last third of gestation farrowed an average of 11.6 live pigs per litter.

The successful ration provided 10-12 lb. corn silage per animal per day throughout the period, plus 3-3½ lb. of 20% protein and corn silage balancer for gilts before breeding and during the first third of gestation for gilts. The sows received 2½-3 lb. of the protein and silage balancer during these periods.

From three weeks before breeding to three weeks after, the sows and gilts received 4-5 lb. protein silage balancer. During the last third of the gestation period they again received 4-5 lb. 20% protein silage balancer along with the basic corn silage feed.

Thyroprotein for Sows: The key to getting pigs off to a good start is a generous supply of nutrients for the sow to maintain a high level of milk flow, Dr. Hays said.

He said Iowa State College researchers have had excellent results from full feeding of sows and gilts through the nursing period. Thyroprotein supplement in a high-energy lactating ration, he said, has resulted in more rapid gains in nursing pigs and in saving more pigs per litter.

The Iowa researchers fed 100 mg. of thyroprotein per pound of feed. A full, high-energy ration is necessary at this time to keep the sows from excessive weight loss during the nursing period. Thyroprotein must be fed continuously during the lactating period, he warned. Removal of the thyroprotein results in immediate drop in milk production.

On excellent rations without thyroprotein, he said, 118 sows in the Iowa experiments brought their pigs up from an average birth weight of 2.9 lb. to an average weight of 5.1 lb. for an average gain of 2.2 lb. per pig in the first week. One-hundred-seventeen similar sows with pigs averaging 2.9 lb. at birth brought their pigs up to a 5.5 lb. average at one week—a gain of 2.6 lb. This was nearly 19% greater gain for the pigs whose mothers were receiving thyroprotein.

The thyroprotein supplementation almost cut death loss in half during the first week, Dr. Hays said. Sows receiving only the excellent basal ration lost an average of 0.9 pig per litter. Those receiving the thyroprotein lost an average of only 0.5 pig per litter.

Injection Controls Pig Anemia: According to Dr. Hays, the problem of pig anemia can be met suc-

COINCIDENCE—Harlan Wiederrecht (left), Wapello, Iowa, one of 1,600 swine producers who attended the Swine Production Conference at Iowa State College, was looking through the new life cycle feeding program publication and wondering how to get his pigs to eat pre-starter better when he learned that the men seated at his left were Dr. M. J. Harvey (center), assistant regional manager, agricultural division, American Cyanamid Co., Chicago, and Dr. Vaughn Speer, Iowa State swine nutrition researcher. Dr. Damon Catron (standing), in charge of swine nutrition at Iowa State College, joined the discussion, and suggested to Mr. Wiederrecht that he ask his feed manufacturer about it. The Wapello swine producer was informed that it would make a difference if the pre-starter didn't contain as much sweetening as the minimum indicated in the life-cycle ration.

HEALTH TIPS—Dr. Maynard Spear, Iowa State College extension veterinarian, presented a life cycle disease-control and health program at the Swine Production Conference held at Ames. He posted sections of the program as he spoke, listing special steps in disease control for each phase of life cycle production.

cessfully now with an injection of an iron-dextran complex providing 100 mg. elemental iron per pig. If the pigs do not start eating a trace element fortified feed by the time they are three or four weeks old, he said, a second injection may be necessary to maintain a high rate of gain and blood hemoglobin level. In early weaning programs a single injection at one to three days of age is enough to control anemia, he said.

In trials at Iowa State College, he said, four litters of pigs without any anti-anemia treatment averaged 15.4 lb. per pig at five weeks of age. Twelve litters receiving treatment with iron-copper paste twice weekly weighed 18.1 lb. per pig at five weeks. Twelve litters provided daily with fresh clean soil in their pens averaged 18.7 lb. per pig at the same age. Twelve litters given one injection of Armidexan—an iron-dextran complex—with 100 mg. elemental iron per pig weighed an average of 19.3 lb. per pig at five weeks of age.

Fresh-Mixed Feed Boosts Gain: Dr. Hays also told his audience that pigs will gain faster on fresh feed than on feed mixed, pelleted and stored for as much as six months.

In trials at Iowa State College weanling pigs receiving a freshly mixed and pelleted starter ration averaged 15.8 lb. gain per pig during the starter period. Pigs receiving the same ration which had been prepared earlier and stored for six months before feeding gained only 13.9 lb. on the average.

The difference appears to be a result of the better appetite appeal of the freshly mixed feed, Dr. Hays suggested. When the stored starter feed was fed without a sweetening agent in it, the pigs gained only 12.9 lb. per pig as compared to 15.8 lb. for those getting the freshly prepared feed.

When they received the same ration which had been prepared six months earlier with a pound of saccharin per ton, the pigs gained an average of 14 lb. on the "old" feed. When the "old" prepared ration contained 15% sugar the gains on it increased to 14.9 lb.

However, Dr. Hays pointed out, additions of the "sweetener" never brought the "old" feed up to the gain level achieved by the freshly mixed feed. Gains of the pigs per pound of feed also were higher on the fresh ration than on the ration prepared six months before, even when the sweetener was included in the "old" ration. It has been established, Dr. Hays pointed out, that pig starters should contain some sweetening to make them attractive to weanling pigs. Sugar has been and is being used, but is considered expensive. He said recent Iowa research showed that a combination of 15% high-lactose dried whey and 1 lb. saccharin per ton of feed will result in pig gains equal to or surpassing those on diets containing 15% sugar.

Feeding for Meaty Hogs: Turning to another subject, Dr. Hays said the fact that a higher protein level in the feed can produce a meatier hog has been known for some time, but it hasn't been much used because of the high price of protein and the fact that the premium for meaty hogs was not large.

With increasing interest, prospect of better income from meaty hogs, and the plentiful supply of soybean meal, this method of feeding for meaty hogs may be adopted by some swine producers, Dr. Hays suggested, as a supplement to their breeding programs aimed at meatiness.

In tests using two different levels of protein, the high-protein ration provided 20% protein for pigs up to 50 lb. weight, 18% up to 125 lb. weight and 16% to market weight at about 200 lb. The low-level ration provided 14% protein rations up to 50 lb., 12% to 125 lb. and 10% to market weight.

The carcass of hogs on the high-protein ration produced 49.8% lean cuts of meat. The carcasses from the lots receiving the low-level protein yielded only 47.4% lean cuts of meat.

SELLIN' SAM

"And then and there I decided to do something about having these mean dogs sneaking up and biting me in the leg!"

Confinement House Plans

Prof. N. H. Curry, Iowa State College agricultural engineer, presented plans of houses for confinement rearing of pigs, explaining basic considerations involved, such as: Figuring how many farrowing units needed to produce pigs under different farrowing schedules, maximum and minimum dimensions, things to consider in deciding whether the stalls should head up to the wall or whether there should be a service alley between stalls and wall, things to consider when figuring temperature to fit the differing needs of the sow and the pig—all facts on how to decide, not how to do it.

Dr. Thamon Hazen, assistant professor of agricultural engineering,

(Turn to page 14)

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BACIFERM GETS FEEDS BACK TO MAXIMUM EFFICIENCY FAST! Appetites improve. Pigs pile on weight fast. Mortality goes way down. Baciferm always *stays* on guard because Baciferm contains the exclusive* antibiotic zinc bacitracin. Baciferm's *selective* action kills dangerous bacteria fast but lets beneficial bacteria go right on producing vitamins and other valuable growth factors. With Baciferm, there is no upset of the normal bacterial balance. Fungus infections just don't get started. In stress periods, Baciferm knocks out deadly secondary invaders.

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And—Baciferm can be added to each ton of your swine feed at $2 to $4 less than the tetracyclines.

1. McGinnis, J. et al.: Use-history of Antibiotics as Related to Their Efficacy in Promoting Growth of Turkeys. Poultry Science, in press.
2. Slinger, S. J.: Poultry Nutrition in Focus in a Rapidly Advancing Industry. Feed Bag, July, 1958.
3. Whitehair, C. K.: Medicated Swine Feeds. North Am. Vet. (Am. J. of Vet. Sci.) 39 (No. 2) (Feb. 1958): 32.

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Feed for Thought

SPECIALTY FEEDS

In your efforts to increase your volume and expand your feed operations are you overlooking the field of "specialty feeds"? Each year many alert feed manufacturers add some of these feeds to their line and increase their profits. These include feeds for dogs and cats, rabbits, fish, calves, ducks, pigeons, mink, foxes or chinchillas. In your area one or more of these species is probably present in great enough numbers to make it profitable to provide a special feed for them. These feeds are only "special" because they are generally manufactured in smaller quantities than standard rations. For the most part they can be produced with the ingredients ordinarily handled by the average feed mill and without any special equipment. Only dog foods and milk replacer type calf meals require special ingredients which may not normally be carried in stock. These are easily obtained through your regular sources of supply.

The dog population of the country increases by at least 800,000 animals each year. Today there are at least 25 million dogs in the continental United States. With the general population movement from cities to suburban areas many dog owners and kennels are now direct customers of local mills or feed stores.

The increase in the number of fisherman dude ranches and production of game fish by conservation groups, along with advances in the science of fish nutrition, have expanded the market for pelleted fish food in many areas. We know of producers of trout and other fish for fisherman's dude ranches who spend more than $100,000 each year for pelleted fish food.

Extended use of balanced pellets for pigeons has enabled feed manufacturers to supply a feed which formerly could only be provided by firms which handled and blended seeds. Pellets for rabbits and chinchillas have become important profit items on the price lists of many feed manufacturers. Ducks are excellent customers for feed. They grow rapidly and convert feed into tasty meat very efficiently. Good high-quality calf meals or calf milk replacers can enable the dairyman to market more whole milk and generally also to produce a sturdier, healthier calf. Mink and other fur bearers in certain areas can be major consumers of your products.

Mark-ups are greater on specialty feeds than on your standard rations for poultry, swine, dairy cattle, beef and sheep.

It will pay you to survey your trade area. You will be amazed at the possibilities that exist for big business in specialty feeds. Drop us a line for suggested formulas.

J. R. LINSNER
Director of Technical Services
PETER HAND FOUNDATION

Look for "Feed for Thought" every month. This popular column appears regularly in this same place (page 14) in the first Feedstuffs issue of each month.

Peter Hand

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went into principles behind the heat and ventilation programs for swine housing, setting out temperature ranges for pigs of various ages, relations of moisture to temperature in houses.

"After the pig gets old enough to have his natural thermostat plugged in, he's going to live," Dr. Hazen said. "But how much feed is he using? This is probably the basis we should use." He discussed information behind the statement that "feed costs more than electricity for fuel."

He said in his discussion that "the pig never produces enough heat to evaporate the moisture that develops when the inside temperature of the house is 20° above the outside temperature." He said the cost difference can show $3 return for $1 invested in adequate heat control.

Questions swine producers asked indicated they were taking up this "graduate college" type of information in its own terms. They asked for figures on savings in insulated houses in summer, comparisons of electric tape with copper coils in floor heating and both of these with petroleum or gas-fired hot-water heating, the need for space heat above heated floors and other questions that dug into professional engineering techniques.

Hess & Clark Names 'Sterling Salesmen'

ASHLAND, OHIO — Seven salesmen have been named to the Hess & Clark Sterling Silver Club, for "sterling salesmanship." They include Charles L. Arthur, Geneva, N.Y.; Bob Lee Hall, Waco, Texas; A. Joseph Kuncl, Jr., Ames, Iowa; Walter A. Martin, Sacramento, Cal.; Arlin R. Messler, Fremont, Neb.; Milton C. Powell, Richmond, Va., and Fred Speck Jr., Centreville, Md.

Membership in the club consists of those named each year as the company's "Sterling Salesmen." Each winner receives a gift of sterling silver. This year's awards were the second in this annual presentation. Mr. Kuncl and Mr. Martin were repeat winners.

The awards are based on attainment of sales objectives, outstanding salesmanship, personal attitude and character and company loyalty, according to Russell H. Eshelman, vice president—marketing for the Ashland, Ohio, animal health product manufacturer.

THE SECRETARY OF AGRICULTURE
WASHINGTON

February 18, 1959.

Dear Mr. Larson:

I regret greatly that I cannot be with you in person on the occasion of your Fifteenth Annual Convention. But may I extend my personal greetings and best wishes for a most successful meeting.

Through service, feed manufacturing has earned a place among the ten most important industries in the country. You are a vital link in our agricultural production chain. You speed the results of research to the individual farm producer. You help put meat, milk, and eggs on the table with efficiency and economy.

This is of course an important service for our farmers and ranchers. It is an equally important service for our consumers, who are increasingly aware of the diet value of the end-products of animal agriculture.

As the feed manufacturing industry increases its efficiency, it increases its contribution to the over-all objective of us all -- a sound, prosperous and expanding agriculture, developing under the free enterprise system which has made our favored country great. With God's help, we will achieve this goal -- in the interests of all America.

Sincerely yours,

Ezra Taft Benson

Mr. Lloyd S. Larson
Executive Vice President
Midwest Feed Manufacturers Association
Kansas City, Missouri

BENSON LETTER—Shown is the letter sent by Ezra Taft Benson, secretary of agriculture, to Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., on the occasion of the MFMA's 15th annual convention in Kansas City recently.

Oregon Cattle Men May Begin Testing

REDMOND, ORE. — Beef cattle production testing may be established in Oregon, if preliminary studies and a proposed constitution and bylaws for a state association are approved by breeders.

More than 40 beef cattle breeders, representing Hereford, Angus and Shorthorn, registered and commercial, plus a dozen county agents recently met here to discuss the issue.

The program of beef cattle production testing as carried on in other states was explained. A few Oregon breeders already are following beef cattle production testing voluntarily, it was explained.

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The first practical mobile baled hay grinder grinds round and square bales with equal ease.

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WE WANT BROILER GROWERS TO PROVE FOR THEMSELVES—RIGHT ON THEIR OWN FARMS—THAT VIPOL 717 NEWCASTLE DISEASE VACCINE CONFERS COMPLETE PROTECTION FROM THE RAVAGES OF NEWCASTLE DISEASE!

NEWCASTLE DISEASE currently is bringing heavy mortality and tremendous profit losses to the poultry industry.

Fieldmen and veterinarians have been viewing the terrible destruction being spread by Newcastle Disease—in vaccinated broiler flocks, and in grown breeding flocks—with considerable concern. In case after case, flocks vaccinated with VIPOL 717 Newcastle Disease Vaccine have been an "island of safety" in afflicted areas.

To demonstrate to the industry our unswerving faith in the outstanding immunizing power and effectiveness of the VIPOL 717 Strain, we will give —free of charge and obligation—5,000 doses of VIPOL 717 Water Newcastle Disease Vaccine to any broiler grower whose flocks have suffered an outbreak of Newcastle Disease after vaccinating with the B-1 Strain.

We will do this for two reasons:

Firstly, we know beyond the question of a doubt, that Newcastle Disease can be prevented—with proper vaccination. We want every broiler grower to prove to his own satisfaction, on his own farm, that VIPOL 717 Newcastle Disease Vaccine—and only VIPOL 717—can give this unshakable protection.

Secondly, we are anxious to offer continuing proof of a challenge which we have been placing before the poultry industry for more than two years:

"The VIPOL 717 Strain of Newcastle Disease Vaccine produces a higher titre and a more durable immunity than the B-1 Strain."

This statement has been headlined in the national trade press for many months, beginning some two years ago. To date, not a single contradiction has been received from any vaccine manufacturer, pathologist, breeder, hatcheryman or grower.

Weakness of B-1 Strain

All mass-applied Newcastle Disease vaccines on the market today—other than the VIPOL 717—are of the B-1 Strain. The B-1 Strain can immunize through the drinking water *only* if the treated water is consumed quickly and the vaccine has a very high titre so that it can stand extreme dilution. Birds not drinking for some time after the water has been treated with vaccine of the B-1 Strain will consume water in which the virus has dissipated and lost its infecting power.

The best indicator of generalized immunity is high blood titres produced within the birds. These cannot be demonstrated in all the birds infected with the B-1 Strain.

Only one mild strain of Newcastle vaccine consistently produces the *high* blood titres and durable immunity sought in mass application. That strain is the VIPOL 717 Strain of Newcastle Disease Vaccine (also known as the LaSota Strain). It is manufactured exclusively by Vineland Poultry Laboratories, Vineland, N. J.

The VIPOL 717 Strain retains its power to immunize for periods as long as 24 hours and more after it has been added to poultry drinking water. Because of the original high titre of VIPOL 717 Newcastle Disease Vaccine, it can stand dilution in the drinking water well beyond recommended levels and still retain its full potency for 24 hours or more.

Unlimited Immunizing Power

This strain has an unlimited infecting potential that continues through the vaccination reaction period and insures the immunity of a maximum number of susceptible birds. Revaccinations on young chicks with VIPOL 717 are reduced to the minimum and are necessary only if the birds are carrying parental immunity at the time the vaccine is first given.

On the other hand, revaccinations with the B-1 Strain are necessary because this strain of virus lacks infecting potential among those susceptible birds that do not receive a dose of vaccine at the time of vaccination.

Don't risk the health and lives of your birds . . . your very livelihood . . . to vaccination that does not promise the ultimate in flock protection against destructive Newcastle Disease. Insist on the VIPOL 717 Strain —the unchallenged leader in providing Newcastle Disease Immunity.

To obtain your free 5,000-bird supply of VIPOL 717 Water Newcastle Disease Vaccine, write directly to Vineland Poultry Laboratories, Vineland, N. J. Describe your "break" with the B-1 Strain, giving vaccination schedule and number of birds involved. Upon receipt of your letter, your free supply of VIPOL 717 will be shipped to you promptly with complete directions for use.

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round and square bales with equal ease.

1219 Twelfth Street S.W. EMpire 5-1481 Cedar Rapids, Iowa

NEW HAMPSHIRE PANEL ON COCCIDIOSIS—When this group of panelists began a discussion of coccidiosis the first night of the recent two-day University of New Hampshire Poultry Health Conference, they uncorked a problem that had so much interest, it carried over into the next day's discussion period and through the luncheon period of the second day. Members of the panel (left to right) are: Dr. Paul Harwood, Hess & Clark, Inc., Ashland, Ohio; Dr. S. A. Edgar, poultry department, Alabama Polytechnic Institute, Auburn; Richard Strout, UNH, moderator; Dr. N. F. Morehouse, Dr. Salsbury's Laboratories, Charles City, Iowa; Dr. Sterling Brackett, American Cyanamid Co., Princeton, N.J.; Dr. Eldon Johnson, president, UNH; Dr. T. A. Hymas, Dow Chemical Co., Midland, Mich.; Dr. Frederick Coulston, Sterling Drug, Inc., Rensselaer, N.Y., and Dr. F. V. Washko, Merck & Co., Rahway, N.J. (See story on page 65.)

Cargill Buys Toledo Site for Grain Export

TOLEDO—Purchase of land here for construction of a grain export elevator has been announced jointly by Cargill, Inc., grain handling and processing firm headquartered in Minneapolis, and the Toledo Port Authority.

Owned formerly by the New York Central and Wabash railroads, the land fronts on the Maumee River six miles from Lake Erie in the Middlegrounds area. The area was selected, Cargill said, because of its accessibility to rail and truck traffic as well as to lake vessels and seagoing freighters via the Maumee's proposed 27-ft. channel that will accommodate any vessel capable of passing through the seaway.

Dallas Exchange Elects Vic Petta President

DALLAS — Vic Petta, Pearlstone Mill & Elevator Co., was elected president of the Dallas Grain Exchange at its recent annual meeting, the exchange has announced. He succeeds R. S. Hjelmseth, Russell-Miller Milling Co.

Elected vice president was Cliff Cassidy, Jr., Cassidy Feed Mills. Homer Rogers, Dogett Grain Co., was named secretary-treasurer.

Directors elected include Mr. Petta; Mr. Cassidy; Mr. Rogers; Mr. Hjelmseth; Walter Blanton, Blanton Grain Co.; R. T. Cofer, Continental Grain Co.; G. L. Collins, J. C. Crouch Grain Co.; J. R. Cooper, J. C. Crouch Grain Co.; L. R. Perkinson, Pearlstone Mill & Elevator Co., and R. D. Zumwalt, Burrus Mills, Inc.

Arthur C. Nielsen, Jr.

NBC SPEAKER — One of the featured speakers at the National Broiler Council's first National Broiler Industry Conference in Dallas, Texas, March 20-21, will be Arthur C. Nielsen, Jr., president of A. C. Nielsen Co., Chicago, marketing research organization. Mr. Nielsen's subject will be "Changing Channels of Food Distribution." Other speakers will be authorities discussing what to do about overproduction, labor relations, integration, the retailer problem and other issues. NBC board of directors and committees will hold their first 1959 meeting March 19 prior to opening of the conference. Special activities are being planned for the ladies. Reservations should be sent directly to the Statler Hotel, Dallas.

November Fish Meal, Scrap Output Higher

WASHINGTON—Fish meal and scrap production during November, 1958, showed a minor gain of 1% over the same month of the preceding year, the Fish & Wildlife Service reports.

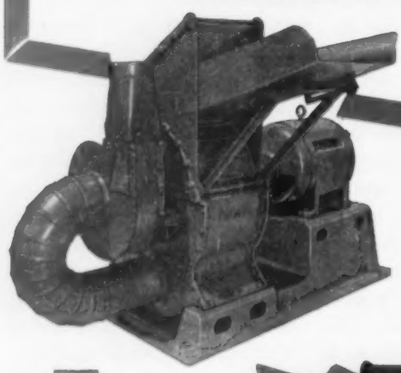
Production in November was just short of 10,000 tons. For the first 11 months of 1958, the total was 202,000 tons, 14% below the previous year for the same period.

Manufacture of fish solubles amounted to 14 million pounds, nearly three times the amount reported during the same month of 1957. Production of homogenized-condensed fish totaled 4.2 million pounds, a gain of 21% over November, 1957.

Plans Plant Expansion

PORTAGE, WIS.—The Kroger Co. food chain is considering construction of a new egg packaging unit here, Marvin T. Harrington, manager of the present Kroger egg plant in Portage, has announced. He said the proposed building will have 30,000 sq. ft. of floor space, compared with 8,000 sq. ft. at present. Equipment under consideration would handle all egg packaging operations, except candling, automatically, and would greatly increase the plant's capacity, he said.

Whatever the grinding job..
a JAY BEE Hammermill
JAY BEE
will do it best!

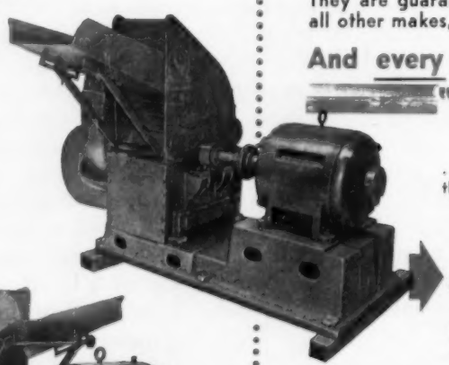


For more than a quarter of a century, Jay Bee Hammermills have been the standard of comparison for high capacity—low operating cost—trouble-free performance—long life. They are guaranteed to outgrind and outlast all other makes, conditions being equal.

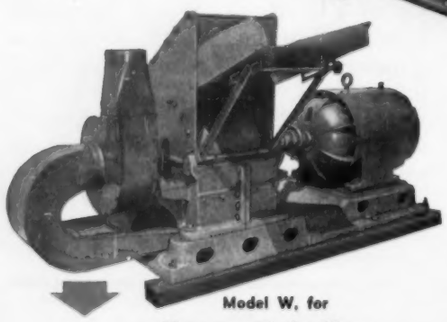
And every JAY BEE gives you "Texture Grind"...

... in all screen sizes—always cool, thorough, uniform.

Model UX, for
Custom Grinding
2 sizes—25 to 60 H.P. A sturdy light model, giving high capacity at low operating cost.



Model SW, for
All-around Mill Work
3 sizes—30 to 100 H.P. A top producing mill for general grinding jobs.



Model W, for
Heavy Grinding
3 sizes—50 to 200 H.P. Ruggedly built and perfectly balanced for high volume at low cost.

Sedberry now offers complete mill installation service—every step from plan to production. Mail the coupon for details!

J. B. SEDBERRY, Inc., Dept. F, Franklin, Tenn.
Please send me all details about the Jay Bee mill(s) checked below:
....Model UX ....Model SW ....Model W
....The "Super-matic" Model SM
....Sedberry's "lock and key" mill installation service.
Name .....
Company .....
Street or Box .....
City ..... Zone ..... State .....

J. B. SEDBERRY, Inc., Tyler, Texas • Franklin, Tenn.

KAFIR & MILO
Largest Dealers in Southwest
MID-CONTINENT GRAIN CO.
Board of Trade Victor 9-4671
KANSAS CITY, MO.

Honeggers' proudly announce...

WE DOUBLED OUR BUSINESS LAST MONTH

February sales up

over 100 %

over February, 1958

DOUBLE YOUR TRIPLE

WATCH FOR a NEW series of ads featuring good business men who have Doubled their Tonnage and Tripled their Profits.

Exclusive Franchises are still available in some areas. Some aggressive dealer will Double his Tonnage in your area with Honeggers' Complete Program. It might as well be you!

HONEGGERS' & CO., INC.
FAIRBURY, ILLINOIS

February 12, 1959

E. F. DICKEY
PRESIDENT

To PROGRESSIVE FEED DEALERS

TALK IS CHEAP; it's results that count. Many feed dealers across the land have DOUBLED THEIR TONNAGE and TRIPLED THEIR PROFITS on the HONEGGER program. Of course, there is a reason, -- but we know the reason and what others have done, YOU can also do. We promise you this.

Are you being crowded by piddling crossroad dealers? Are you being by-passed on larger feeders? Do you need more territory protection and a more complete line of products that you can merchandise on an exclusive basis? Do you need a more aggressive advertising and merchandising program?

Then why don't you do as hundreds of other good dealers have done and line up today with the most progressive feed company in America.

We're BIG enough to do anything that we need to do, yet SMALL enough to give you and your problems individual and PERSONAL attention.

Write or call us today. Get the facts. We'll show you how to make more money on a PROTECTED and EXCLUSIVE franchise basis.

Ed Dickey
President

EFD:JH

Write, phone or wire collect for complete details...*DAY or NIGHT!*

HONEGGER Layers

HONEGGERS'

BIG H FEEDS

FEED & FARM BUILDINGS DIV., FAIRBURY, ILLINOIS BREEDER HATCHERY DIV., FORREST, ILLINOIS

TONNAGE
YOUR PROFITS

What others have done....you can do also
WITH HONEGGERS' COMPLETE PROGRAM

HONEGGER BIG "H" FEEDS

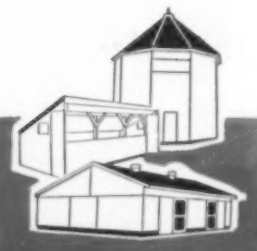
Honeggers' offer a complete line of feeds and feeding programs backed by practical farm research. The rapidly increasing number of enthusiastic users is testified to by the volume of Honeggers' sales.

HONEGGER LAYERS

Honegger Layers are one of the nation's outstanding egg laying strains. They are sold by Honegger Dealers and Associate Hatcherymen. And remember, only 600 chicks will eat a carload of feed.

BIG "H" LIVESTOCK AND POULTRY EQUIPMENT

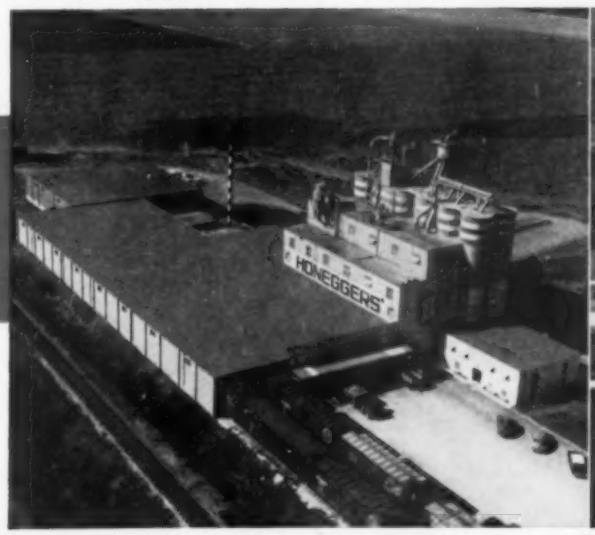
Every item of livestock and poultry equipment manufactured in Honeggers' own equipment plant at Taylorville, Illinois, is guaranteed by Honeggers. The practical design and rugged construction of Big "H" Equipment is a plus factor.



HONEGGER FARM BUILDINGS

Honeggers' complete line of pre-built Farm Buildings mean extra profits for Honegger Dealers. There's no additional investment on your part . . . Here's the perfect tie-in for your livestock and poultry feed business.

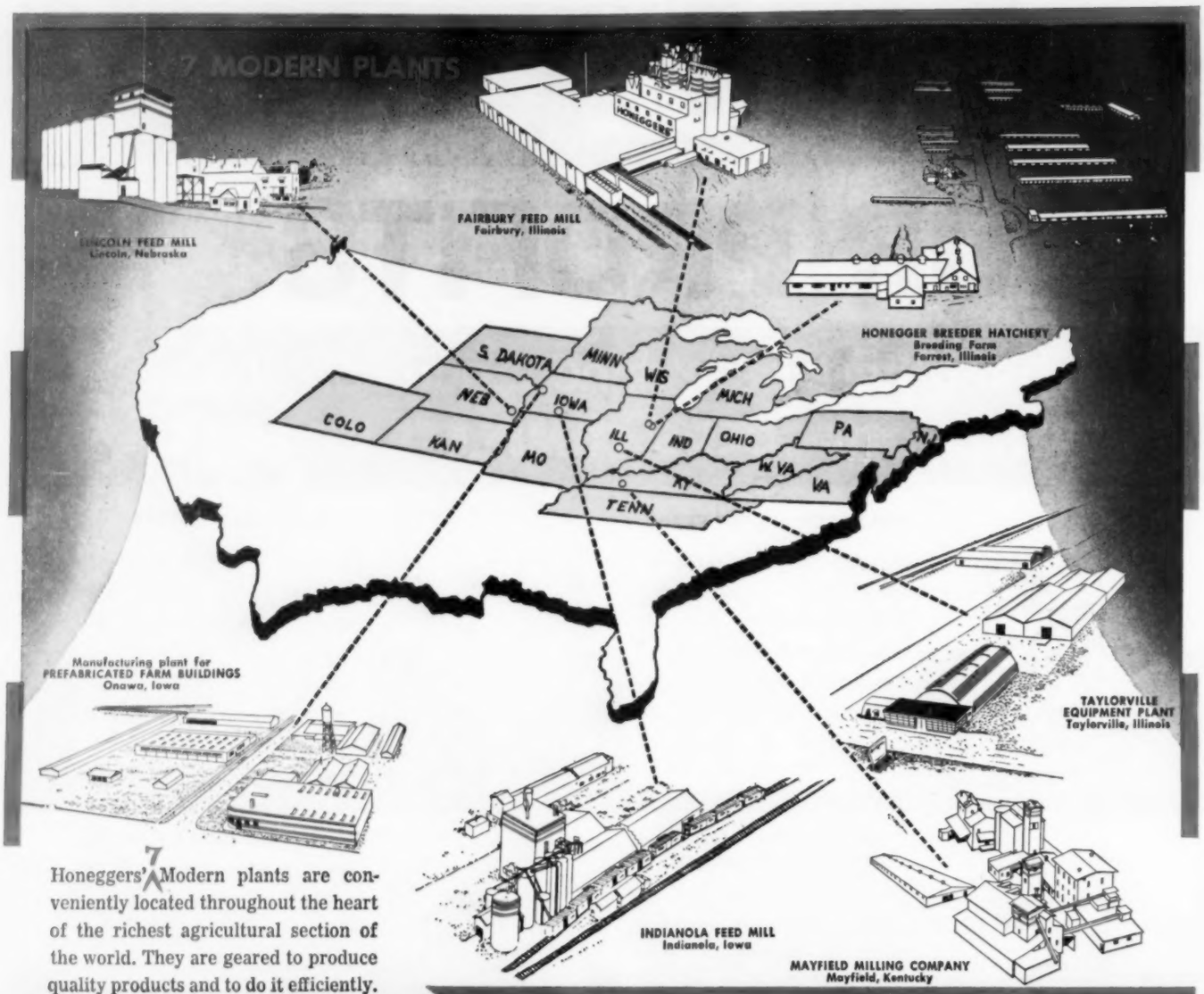
All Honegger Products are sold exclusively by Honegger Dealers ONLY!



Honeggers' modern plants, like this mill at Fairbury, Illinois, are geared to produce the best possible products at the lowest possible cost. The Fairbury mill for example features electronic controls, "push-button" ingredient selection and all bulk handling.

The 600 acre Honegger Research Farm, where practical feeding, management and disease control practices are developed and demonstrated. Dealers find that a tour of Honeggers' by customer prospects really helps them sell.

cake, distillers products, soybean oil



Honeggers' 7 Modern plants are conveniently located throughout the heart of the richest agricultural section of the world. They are geared to produce quality products and to do it efficiently.

CONSISTENT, HEAVY IMPACT advertising sells for you in your customer's farm press.

Here is another plus factor for Honegger Dealers. Full page and double page ads run in color in leading farm publications. These ads keep customers constantly aware of the ever increasing services and products available at their nearby Honegger Dealers.

What Honeggers' Complete Program can do for your customers it can also do for you. When you add up all the plus factors of the Honegger Complete Program, the road leads to greater sales and greater profits for farmers and for dealers.

No other company in America has so much to offer!

R. E. Hartig

P. J. Ferree

Bemis Announces Personnel Changes

ST. LOUIS—R. E. Hartig, manager of Bemis Bro. Bag Co.'s plant at Flemington, N.J., has been transferred to the product development unit of the general sales department, St. Louis. P. J. Ferree, superintendent of the company's plant at Houston, Texas, has been named to succeed Mr. Hartig as plant manager at Flemington.

Mr. Hartig's function will be the promotion and development of new uses for company products. Mr. Ferree will be responsible for production of products at the Flemington plant.

Mr. Hartig, who joined Bemis in 1930 as a sales representative of the Brooklyn bag factory, was placed in charge of the plant's waterproof department in 1946. He became assistant to the manager in 1951 and plant merchandiser in 1953. In 1956, when Bemis opened its new plant in Flemington, he was named the first manager, a position he held until his recent transfer.

Mr. Ferree started with Bemis in 1942, but was soon called to military service. In 1946 he returned and was assigned to the general engineering department, St. Louis. In 1948, after having participated in special assignments, he was transferred to the company's Houston plant as a foreman. He became assistant superintendent in charge of the multiwall division in 1950 and multiwall superintendent in 1952. The following year Mr. Ferree was made supervisor for promotion and sales of plastic bags, and in 1956 was appointed as an assistant to the sales manager at Houston. He became plant superintendent in 1957.

Dannen Mills Buys 2nd Research Farm

ST. JOSEPH, MO. — Dwight L. Dannen, president, Dannen Mills, has purchased the Judge Fred J. Culver farm on DeKalb Road south of St. Joseph. Mr. Dannen said the 464-acre farm will be used as a second research farm by the milling and manufacturing firm he heads. Dannen Mills already has one research farm east of St. Joseph.

The farm was acquired, Mr. Dannen said, to expand feeding and research operations of the mill. Dairy and beef cattle feeding experiments are carried on at the present farm.

The new property will be used for hog and poultry feeding operations. It has a seven-acre lake, numerous feed lots, hog farrowing sheds and good pasturage. The farm, which for 25 years has been used by the Culver family for livestock, also includes three tenant houses and several barns.

More and More . . . Feed Mills Are using More and More— Stabilized ANIMAL FATS and MEAT PROTEINS

Find Out Why . . . WRITE
NATIONAL RENDERERS ASSOCIATION
Organized in 1933
20 N. LA SALLE ST.
CHICAGO 2, ILL.
Phone FR 2-3299

Oklahoma Tonnage Shows 17% Drop

OKLAHOMA CITY, OKLA.—Total feed tonnage reported by the state of Oklahoma for the 1957-58 fiscal year was down 17% from the previous year, according to a comparison released recently by the Oklahoma Department of Agriculture.

The comparison shows a total of 877,833 tons for 1957-58, compared with 1,057,839 for the previous year. The 1957-58 tonnage also fell short of the 1955-56 total of 931,683 tons and was the lowest since 1953-54.

Dairy and cattle feeds combined were down sharply from the previous year. For 1957-58, the total was 192,-419. The previous year it was 313,844. Poultry feeds combined were also down slightly. Chop feeds, alfalfa meals, brewers products, corn products, peanut oil meal, molasses, wheat shorts, oat products and miscellaneous feeds also showed a drop in tonnage.

Mineral feeds, cottonseed meal or cake, distillers products, soybean oil meal, milk products, wheat bran and other wheat products, meanwhile, showed an increase, while dog and small animal feeds and animal products all held at about the same level as the previous year.

Oklahoma tonnage has followed a rather erratic pattern in recent years. From 1948-49 through 1952-53 there was a steady annual climb to over 1 million tons. Since that time the tonnage has alternated from approximately 1 million tons one year to near the 900,000 ton level the next.

PELLET PLANT DAMAGED

OKANAGAN, WASH.—Fire of undetermined origin resulted in approximately $10,000 damage to a pellet mill at Monse, near here, recently. The mill, which has been turning out 15 to 20 tons of feed pellets a day, will be closed for a period of 30 to 60 days, according to Charles Bordner, Welden Reynolds and Bud Priest, owners.

Connecticut to Honor Prof. H. L. Garrigus

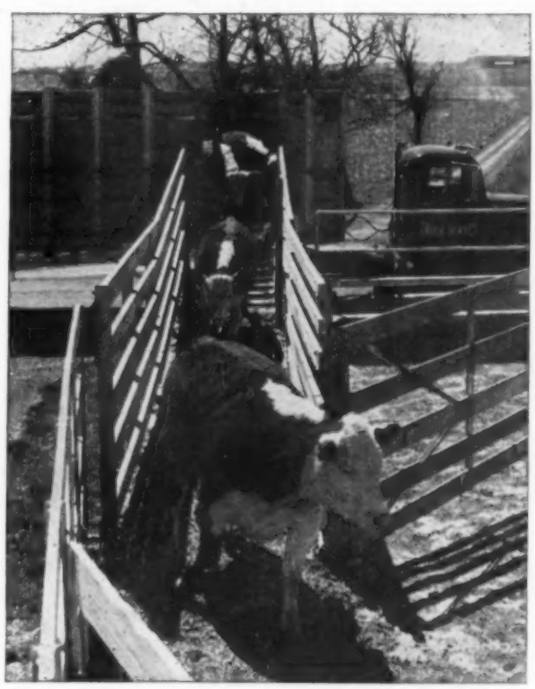
STORRS, CONN.—Prof. Harry L. Garrigus, emeritus professor of animal husbandry at the University of Connecticut, will be honored at the 1959 Little International Livestock and Horse Show to be held March 13-14 at the university.

The show will be dedicated to him.

Although he retired from active teaching at the university in 1941, he has continued to maintain his interest and activity in the livestock industry. He is often referred to as the "Animal Husbandman of New England."

Two of the show's judges are sons of Prof. Garrigus. They are Dr. Wesley Garrigus, head of the animal industries department, University of Kentucky, and currently president of the American Society of Animal Production, and Dr. Upson Garrigus, in charge of sheep teaching and research at the University of Illinois.

Here is where Injection Sparine makes money for you!



Sparine reduces shipping-weight losses from range to feed lot by over 50% in most cases

Sparine controls tension, nervousness, and unruliness

Sparine facilitates handling, loading and shipping

Talk to your veterinarian about the many uses of SPARINE. He will show you how SPARINE can make your job easier.

INJECTION SPARINE makes money for cattle owners by reducing weight losses caused by the rigors of shipping. *Here is the proof.*

317 Animals Shipped 18 Hours by Truck

	No. of Cattle	Av. wt. prior to shipping	Av. wt. upon arrival	Av. lbs. lost	% of shrink
Untreated	30	345.5	325.89	19.8	5.6
	26	434.7	405	29.6	6.89
Treated with SPARINE, 0.5 gm./lb. body weight	73	349.6	340.25	9.25	2.6
	39	350.05	340	10.1	2.9
	4	488.25	467.5	21.25	4.3
	27	464	448	15.7	3.4
	59	447.3	434	13.5	3.01
	59	446.65	433.3	13.3	3.04

Injection
Sparine®
HYDROCHLORIDE
Promazine Hydrochloride, Wyeth

AVAILABLE ONLY THROUGH VETERINARIANS

Wyeth
Philadelphia 1, Pa.

JOE BROOKS

BY AL P. NELSON

New Spice for Old Promotion

When Joe Brooks got all his employees together at the mill that night for the monthly sales training meeting, he had quite a crew on hand. There were five men from his Hansen's Creek mill and three from his Endeavor branch. Since the snow was still deep and slushy in early March, the men's overshoes formed quite a lineup by the door, and their mackinaws and storm coats were draped over islands and stacked bags of feed.

The men sat in folding chairs which were always drawn up for this meeting of "brain washing" as the boys kiddingly called it. They were quite sleepy, because Joe always treated them first to a chicken or steak dinner at the Hotel Manitou. But Joe was a fellow who liked to eat, and he always claimed it took strength to think and where could you get more proteins to think with than from good steak.

"Now watch our brains get picked," Milt Peters told Smiley Johnson. "Sometimes when I go home from these meetings I think everything's been taken out of my head."

"Huh," snorted Pop Henley. "Your head has been empty all the time I've known you—that's about 11 years now."

"Hey, enough of that," retorted Milt. "I make enough to pay an income tax, don't I? Yuh gotta be darn smart to make that much today."

Joe held up his hand. "Don't argue, boys. Co-operate so that we can make more sales and so all of us can make more profit under our profit sharing plan. Tonight we've got to plan for a mighty big sales producing event—one of our best moneymakers."

"Which one is that?" asked Milt. "We have so many every month."

Joe grinned. "If we didn't have so many sales producing ideas and events operating in and out of this mill, somebody would be out of a job, because there wouldn't be enough money to pay so many salaries. Remember, I'm no gold mine. The money I use to pay your wages I've got to get from customers. So the more customers we get, the better chances of your getting paid."

"Now will you shut up?" Pop Henley, the veteran growled. "I never heard anyone in my life who could ask more questions than you, Milt, unless it's those guys that advertise cold remedies on radio and TV."

Milt made no reply but stuck out his tongue at the back of Pop's head.

Seed and Fertilizer Day

"We're about three weeks away from our annual Seed and Fertilizer Day," Joe declared.

"That means free bean soup for everyone attending," said Smiley, "and all the prizes we can get from suppliers, plus some we buy ourselves."

Joe nodded. "And the idea is to boost store traffic for that day. The more farmers we get into the store and mill, whether they come for just the bean soup, free coffee and doughnuts or just to gas with their friends, the better chance we've got to sell a lot of seed and book plenty of fertilizer."

"And when they get through buying seed and fertilizer, we might also sell them some feed."

"And maybe some they want ze mobile service," spoke up dark eyed and alert Frenchy LeFeve.

"Say, don't you go trying to win any of our grinding and mixing mill customers for your mobile service," put in Milt quickly. "We get pay incentive rates for what we do here."

Frenchy drew himself up erect. "We go any damn place for ze business mobile—here or even to ze next county," he said. "We don' care who we take it from. We are in ze contest weeth you, remember. Ze mobile service have shown a greater percentage of increase some months than have ze stationary mill and ze bulk."

"Yeah, and we have beaten you guys lots of times, too," Milt said. "And we'll beat you this month, too. You wait and see."

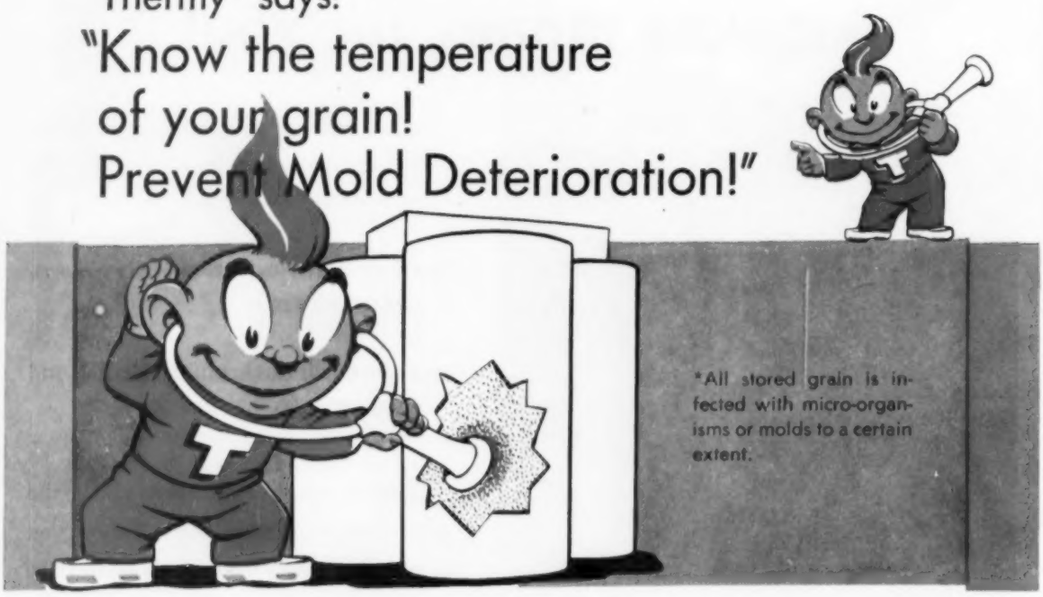
"Ah, that remains to be seen, non?" grinned Frenchy.

At this point Windy Kramer spoke up. "Joe," he said, "you want to promote Seed & Fertilizer Day attendance, don't you? Well, why not offer suitable prizes for the five oldest tractors that are owned by farmers in our trade territory? Zeke Brown has an old one in his barn. Showed it to me the other day. It's a 1914 IH Mogul. There must be other old tractors around."

Joe looked interested. "Say, I believe farmers would like that. But in March with roads muddy we couldn't ask farmers to drive their old tractors in for that day, could we?"

"We wouldn't have to," Windy said. "We'd ask farmers to tell us what old tractors they have. We'd go out and inspect them, choose the five oldest,

Thermy* says:
"Know the temperature of your grain! Prevent Mold Deterioration!"



A temperature of 85 to 95 degrees F. is the most favorable for mold growth. At a temperature of 55 degrees F., mold growth is very slow.

By having reliable and accurate temperature knowledge, you can prevent the favorable conditions necessary for mold growth, insect infestation and moisture migration. This is your key to safe, money saving grain storage — accurate temperature measurement with a Hot Spot Detector system.

Most grain men say their Hot Spot system paid for itself the first year! Learn the facts about money saving, worry free grain storage. Write today for the complete Hot Spot story.

* Thermy means "Thermocouple" — the amazing heart of the Hot Spot temperature system that transmits the temperature from your grain to you.

ELECTRONICS SUBSIDIARY OF NEPTUNE METER CO.

hot spot detector, inc.

CIRCLE OF ... PROTECTION

214 THIRD STREET · DES MOINES 9, IOWA · ATlantic 8-9541

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

George W. Nickel

APPOINTMENT — J. B. Sedberry, Inc., has announced the appointment of George W. Nickel as sales and service representative for Jay Bee feed processing machinery in Arizona and southern California, with headquarters in Whittier, Cal. Formerly head of Nickel Farm Supply, Girard, Ill., Mr. Nickel was a Sedberry representative for several years. He holds a pilot's license and plans to cover his new territory by plane. Sedberry officials said Mr. Nickel's appointment is part of the company's current stepped-up operations on the West Coast, following recent expansion of manufacturing, sales and services in its Tyler, Texas, location.

and then we could haul those five into town on our big truck and display them in the parking yard during Seed & Fertilizer Day. Bet farm folks would come a long way to see those tractors. And eat bean soup, too, of course."

"I'd have to have prizes."

Windy nodded. "You bet. First prize winner might have to get a half ton of complete feed. Second and third prize winners, and so on, would get bags of complete feed or something else."

Joe seemed thoughtful. "I'll bet that would be good advertising," he said. "Perhaps the newspaper man might take some pictures and publish an article about the old tractors. It would be ink—and it would set off our Seed and Fertilizer Day from those staged by other dealers."

Milt's Redheads

"If you are going to try to get all that newspaper publicity," Milt said quickly, "then let me provide a beautiful redhead to sit on each tractor. Man, will that wow them. County and state newspapers would use the stories and pictures, and maybe Life or Look would use some, too."

A loud snort came from Pop Henley, whose face was suffused with rage. "Joe, this has gone far enough. Always he brings in something about his women. This is a feed business. Can him, right now. I'll personally go out and get a farm boy for you who'll do twice the work Milt does, and he won't sleep on feed sacks for hours either, when you aren't around."

"Well," Joe said. "I'll take all these suggestions, pro and con under consideration. I'll investigate the old tractor idea. Maybe we can do something with that. Nobody has promoted that suggestion in this area. As for Milt, maybe I'll have him punch the time clock every hour so we know he's awake. But I'll put him on probation for two weeks, before I ask him to do that. Pop will you sort of act as advisor to see that Milt doesn't flatten the feed sacks too much when he sleeps on them?"

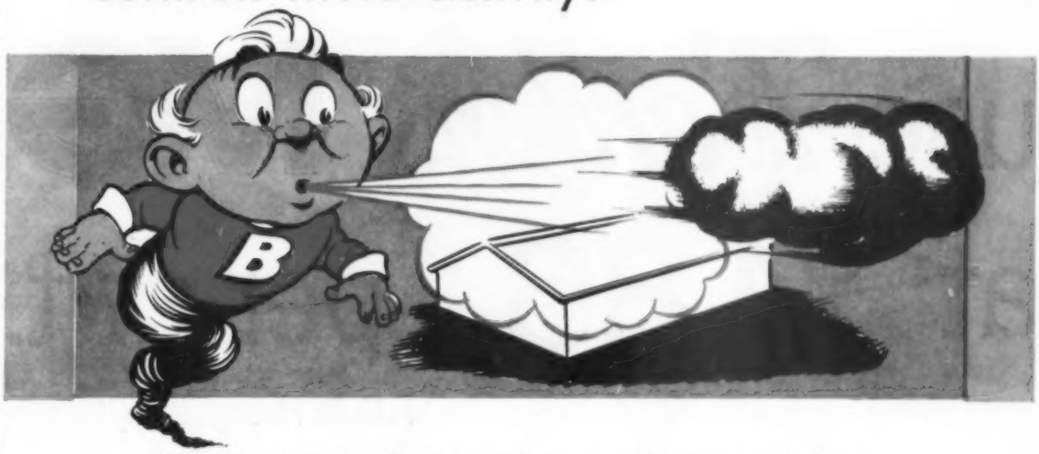
"Will I?" thundered Pop. "I'll keep a log of everything that guy does from the time he comes to work until he leaves at night. Joe, you're gonna fall off your chair when you get my report. Man, I haven't been so excited about anything since the time I got an unexpected $500 bonus for selling an extra carload of mayonnaise when I was on the road 30 years ago."

PLANS NEW ELEVATOR

TOLEDO, OHIO—A new issue of stock in the Ottawa Lake, Mich., Cooperative Elevator Co. is being sold for construction of a grain elevator of at least 48,000 bu. capacity. Arthur Street, manager, said it is hoped that the elevator will be completed in time for the grain harvest late next summer.

TRAVELING STATISTICS—Nichols, Inc., Exeter, N.H., breeder of meat-type chickens, has redesigned its stock delivery truck panels to feature facts and figures indicating how many broilers will be produced from the baby chicks and hatching eggs inside. The front of this truck proclaims, "Here Come 5 Million Chicken Dinners." Each size truck carries a different figure, based on its capacity.

Breezy* says:
"Engineered aeration controls mold activity!"



Hot Spot engineered aeration controls the temperature of stored grain. Correct maintenance of temperature and moisture content tends to inhibit mold activity as well as other undesirable factors.

Type of grain, size and kind of storage house, geographical area, and climate — these determine the necessary Hot Spot aeration installation for full protection.

Hot Spot engineered aeration systems can be operated manually or completely automatically with "Auto-Set" control.

Let "Breezy" explain the trouble-free, money-saving Hot Spot engineered aeration story. Write today for complete information.

***NOTES FROM BREEZY'S AERATION HANDBOOK**

Grain storage molds are involved in many grain condition problems; the heat generated by the life process of these micro-organisms is the most common symptom of grain deterioration in storage. All stored grain is infected with these molds to a certain extent and they require only the correct conditions of moisture and temperature to begin their respiratory and reproductive activity. A temperature of 85° to 95° F is the most favorable; at a temperature of 65° mold growth is very slow. Grain temperatures of 40° to 60° F can be obtained without the necessity of cooling by "turning."

●ELECTRONICS SUBSIDIARY OF NEPTUNE METER CO.

hot spot detector, inc.

CIRCLE OF PROTECTION

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COLUMBIA SOFT PHOSPHATE
IMMEDIATE DELIVERY
LOW COST
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Decline in Cows and Heifers Behind 1% Drop in Calf Crop

WASHINGTON—A decline in cows and heifers two years old and older was pointed out by the Crop Reporting Board, U.S. Department of Agriculture, as the cause behind the 1% drop in the 1958 calf crop.

USDA said 1958 was the fourth consecutive year to show a decrease in the calf crop. The 1958 total was 40,514,000 head. The total for the previous year was 40,766,000.

Last year's calf crop was 5% below the record 1954 crop of 42,601,000 head, but 7% above the 1947-56 average. All regions except the South Central and the West showed declines from 1957.

The number of all cows and heifers two years old and over Jan. 1, 1958, was 46,520,000 head, 2% less than a year earlier. Expressed as a per cent of the cows and heifers two years old and over Jan. 1, 1958, the number of calves born in 1958 was 87%, 1 percentage point above both 1957 and the 1947-56 average.

USDA said this percentage is not strictly a calving rate, since the Jan. 1 inventory of cows and heifers two years old and older does not include all heifers which would give birth to calves during the year and since the inventory includes some cows that are sold before calving.

USDA explained that the percentage is calculated to show the trend in productivity over a period of time and it may fluctuate from year to year due to variation in cow slaughter during the year and trends in breeding herd replacement.

North Central States

The calf crop of 16,756,000 head in the north central states was 2% smaller than in 1957 but 3% larger than average. The east north central states showed about a 3% decrease while the west north central states declined only about 1%. The calf crop expressed as a per cent of cows and heifers two years old and over was 91% compared with 90% in 1957.

In the south central states the calf crop in 1958 was 10,578,000 head, 1% above the previous year, while in the south Atlantic states the calf crop totaled 3,303,000 head, 2% below 1957. The calf crop expressed as a per cent of cows and heifers two years old and older was 84% in the south central states compared with 82 in 1957. The south Atlantic states, at 78%, were 1 percentage point lower than in 1957.

The western states' calf crop of 6,954,000 head in 1958 compares with 6,844,000 head in 1957. The calf crop was 88% of the number of cows and heifers two years old and over on farms and ranches Jan. 1, 1958, compared with 85 in 1957.

The calf crop in the north Atlantic states totaled 2,923,000 head in 1958 compared with 2,999,000 a year earlier. The calf crop as a percentage of cows and heifers two years old and older was 85% compared with 84% in 1957.

LESS 'GLOOM & DOOM'

PORTLAND, ORE.—The Association of American Agricultural College Editors from Oregon, Washington, Idaho and California meeting here was advised to write less of "agriculture's gloom and doom" and spend more time helping farmers and ranchers do a better production job in the future. Richard (Dick) Turner, Portland, vice president, Dawson & Turner advertising agency, told the editors that some 7,000 more mouths are daily reporting for dinner and it might not be too far away before the region's food producers will have trouble meeting the increasing demand for their products.

Palatability of Meat Seen as Research Area

WINNIPEG — The opinion that "too few experiments evaluating the effect of feeding or breeding on carcass characteristics include studies on the palatability of the cooked cuts" was expressed at the eighth annual prairie regional meeting of the National Research Council of Canada held in Winnipeg.

The speaker was Dr. C. Edith Weir, chief, division of home economics, American Meat Institute Foundation; member of the food and nutrition research advisory committee of the U.S. Department of Agriculture, and noted authority in meat research.

In her address, given at the annual banquet, and entitled, "Interrelationships of Animal Feeding and Meat Quality," Dr. Weir stressed new research findings and needs in this area of meat research and placed particular emphasis on palatability characteristics (tenderness and flavor) as influenced by the level of feeding and rates of gain of the animal.

Dr. Weir said, "Research on palatability characterics often is done on carcasses with unknown feeding and breeding histories of the animals. These frequently are weaknesses in project design and unnecessarily curtail the amount of valuable data that could be developed by such research."

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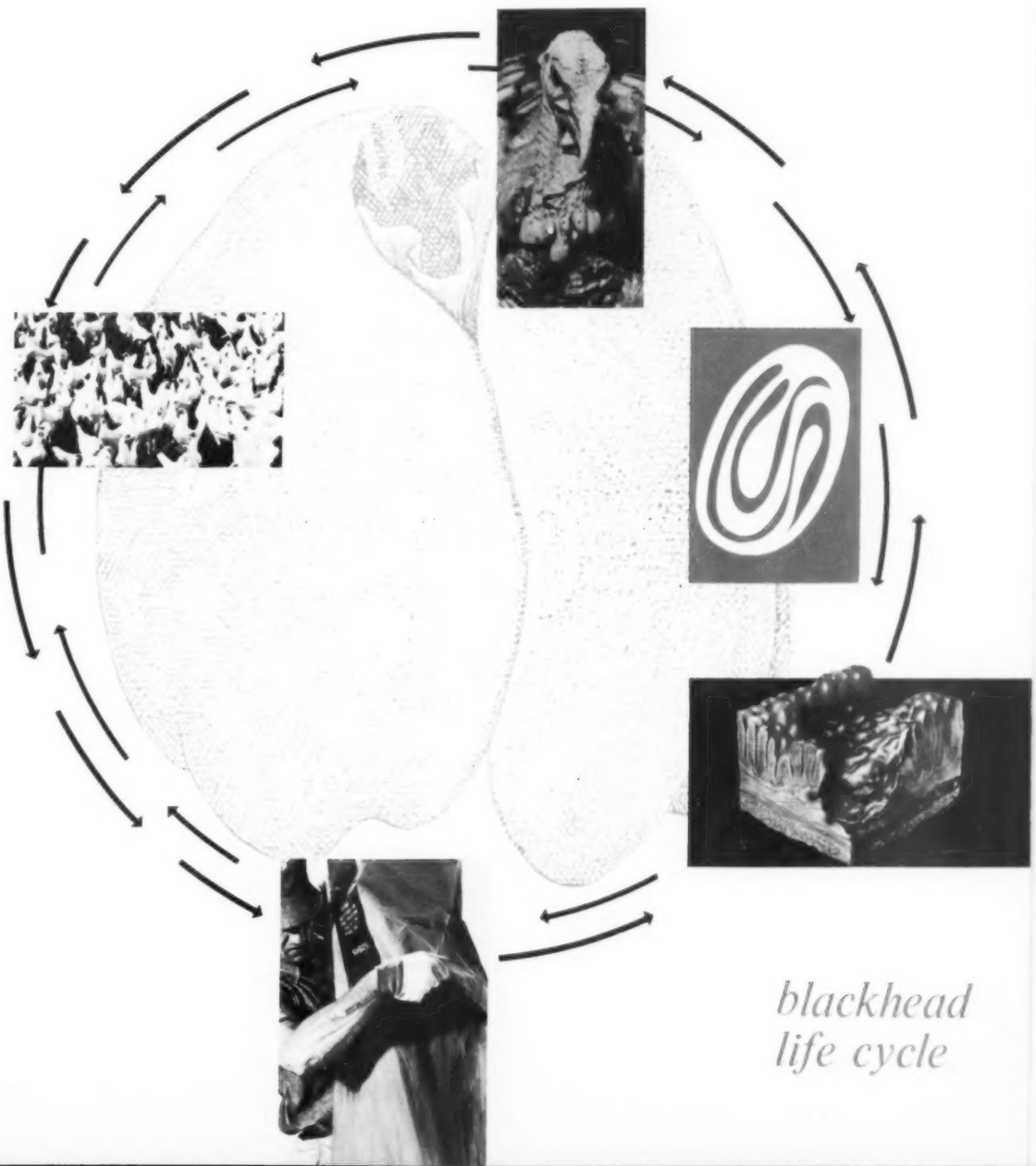
for members of the feed and livestock industries



blackhead life cycle

BLACKHEAD DISEASE

in turkeys

SYMPTOMS Poults 8-16 weeks usually affected; weakness; droopiness; marked loss of appetite; watery, sulfur-colored droppings; head parts **may** turn black; mortality averages 50%.

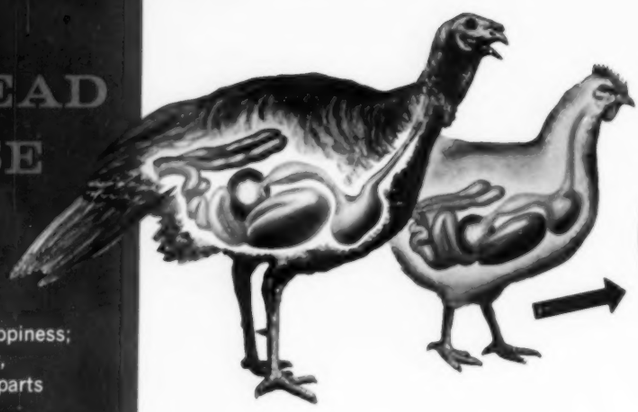
LESIONS* Walls of ceca swollen, marked with open sores or ulcers; some peritonitis if ulcers perforate cecal wall; hard grayish-yellow cecal core with cheese-like consistency, sometimes streaked with blood; liver lesions in form of circular, yellowish-green depressions, ½ inch or more, in diameter.

in chickens

SYMPTOMS Considered stress disease; may be "triggered" by vaccination reactions; exposure to adverse weather conditions, contaminated range, etc.; symptoms include drowsiness; marked loss of appetite; yellowish-brown, foamy droppings; (passage of sulfur-colored droppings—almost always a sign of blackhead infection in turkeys—may not be observed in chickens).

LESIONS* Cecal cores may be confused with plugs seen in pullorum or cecal coccidiosis; peritonitis—where cecal wall perforates—resembles C.R.D. lesions; liver lesions not as pronounced or seen as often as in infected turkeys; pin-point necrosis in liver, lesions resemble those associated with fowl cholera and infectious avian hepatitis.

*The field diagnosis of blackhead should be confirmed by a poultry pathologist as soon as possible. Treatment of blackhead is best carried out under the direction of a veterinarian.



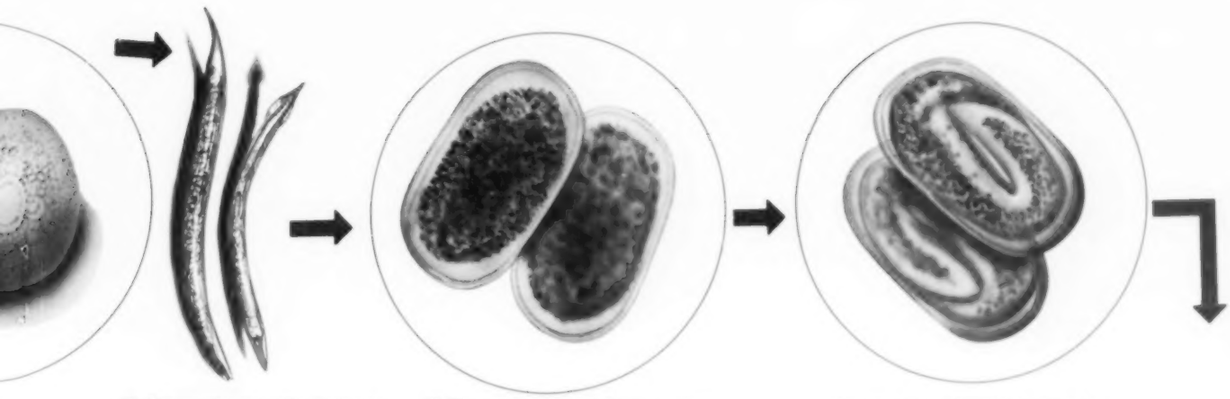
● Blackhead, once considered primarily a disease of turkeys, is increasing in importance as a serious condition of broiler and replacement flocks.

● The protozoan parasite **(Histomonas meleagridis)** responsible for blackhead in turkeys and chickens; considered capable of spreading the infection when passed in the droppings of diseased or carrier birds. However, the chief source of infection is the embryonated egg of the common cecal worm which, after being passed by an infected chicken or turkey, is capable of surviving in the soil for periods up to 36 months.

BLACKHEAD

● A liver showing the typical circular, yellowish-green lesions associated with blackhead infections. These liver and cecal lesions almost always are observed in diseased turkeys. However, the lesions in affected chickens are usually confined to the ceca.

● From the ceca the protozoa invade the bloodstream and are carried to the liver. However, cecal droppings of infected birds carry the protozoa and these contaminated droppings (and cecal worm eggs) are responsible for completing this phase of the blackhead life cycle.

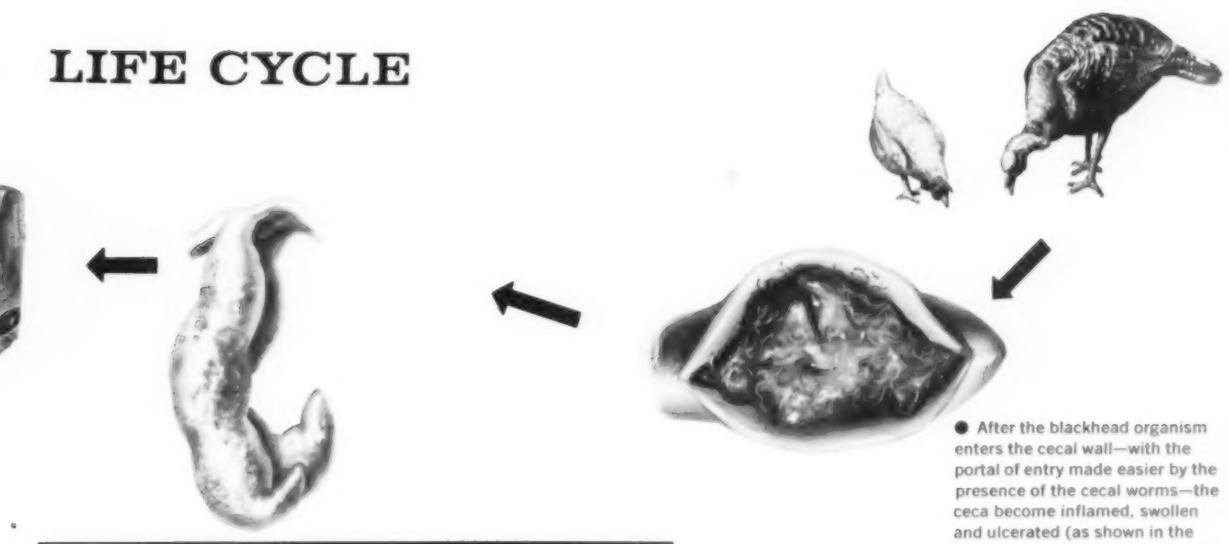


● Shown above are the male and female cecal worms (approximately 10 times their actual size). Some research workers feel that the invasion of and subsequent damage to the cecal wall by these parasites helps initiate the blackhead infection. The means by which the blackhead protozoa enter these parasites is unknown.

● The eggs of the cecal worm, when passed by a bird infected with blackhead, usually harbor the blackhead organisms. However, incompletely developed eggs **are not capable** of causing blackhead disease.

● After approximately two weeks outside the host's body, cecal worm eggs develop into the larval form shown above.

LIFE CYCLE



● After the blackhead organism enters the cecal wall—with the portal of entry made easier by the presence of the cecal worms—the ceca become inflamed, swollen and ulcerated (as shown in the drawing on the left). The mucous lining becomes thickened and is covered with a foul-smelling, yellowish-green exudate, with a cheese-like consistency.

PREVENTION of blackhead infections calls for: range rotation, screened or slatted floors, and wire platforms for feed and water hoppers to reduce the exposure of susceptible birds to the embryonated eggs of the cecal worm, the periodic feeding of phenothiazine to reduce the cecal worm population and feeding continuously low levels of antiblackhead drugs such as HEPZIDE® (nithiazide). In chicken flocks, where the disease is apt to be "triggered" by stress conditions, the prophylactic feeding of antihistomonad drugs and the cushioning of setbacks at times of stress are indicated.

Outbreaks of blackhead may be treated by the use of HEPZIDE Soluble Powder in the drinking water for seven to ten days. The use of prophylactic feed levels of HEPZIDE after the disease has been curbed will depend on local farm conditions.

Prepared for members of the feed and poultry industries in the interest of poultry health. Merck & Co., Inc., Chemical Division, Rahway, New Jersey. Reprints of this chart, or blowups as wall posters 19" x 25", are available on request.

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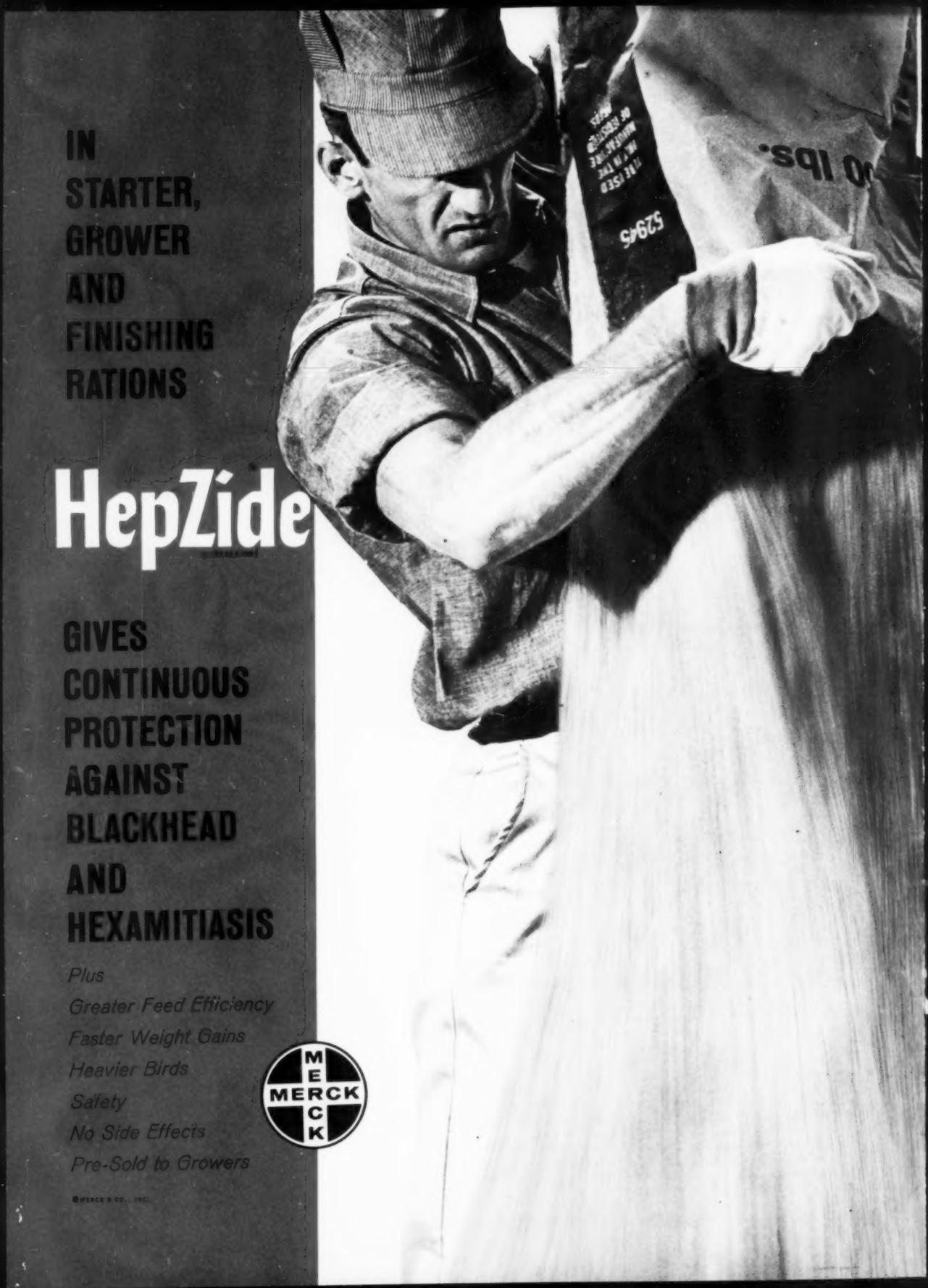

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ICC Sets Hearings On Rail Rates at Denver, Portland

SAN FRANCISCO—After several attempts to arrive at dates suitable to the protestants and respondents, the Interstate Commerce Commission has set hearings on two dockets concerning rail rates on fresh meats and packinghouse products, transcontinental and westbound. Involved in the hearings are ICC docket 32252 and I&S docket 7068.

ICC has set the Denver hearing to start March 24 and to continue through March 27. The Portland hearing will start March 30 and run through April 2.

E. Floyd Forbes, president of the Western States Meat Packers Assn., said the two hearings are "probably the most important rail hearings the western livestock and meat industries have ever faced." He said that if the rates are established as set forth in I&S docket 7068, the entire relationship that formerly existed between fresh meats and packinghouse products westbound by rail and livestock rates will be "wiped out."

He said rates from midwestern and intermountain points to Pacific Coast points will be practically identical on both meats and livestock. "This, of course, would forever prohibit western packers from buying necessary livestock in the intermountain and midwestern areas in competition with packers in those areas," Mr. Forbes commented. It would also, in Mr. Forbes' opinion, have a very distinct effect on the ability of Pacific Coast feeders to buy feeder livestock in those areas in competition with feeders and packers there.

The Western States Meat Packers Assn. is urging the western livestock and meat industries to "put forth every effort to have witnesses from the meat packing, feeding and producing segments of the industry present to express their opposition to the establishment of these proposed rates."

The association will be represented in these hearings by Charles E. Blaine & Son, traffic manager; President Forbes, and individual member packers who have been affected by the present rates westbound between meats and packinghouse products and livestock.

It is expected also that the livestock organizations in the nine western states will have witnesses in opposition to these cases, as well as the Public Utilities Commission of Oregon and the Public Service Commission of Washington State. The various trucking associations will also oppose these rates. Union labor in the packing industry is expected to be represented.

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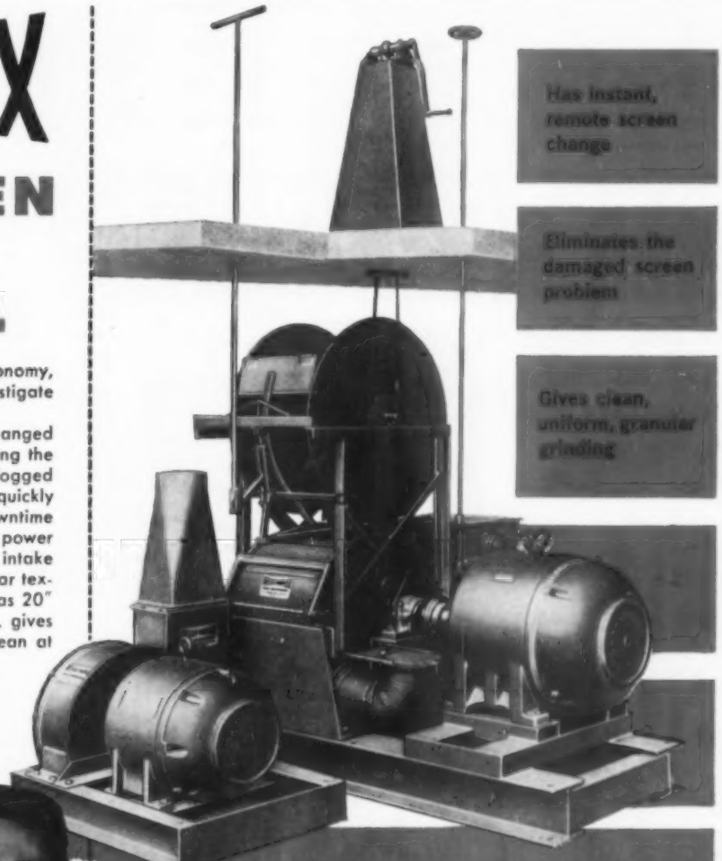

"In our elevator at New Hope, Ohio, we have a Kelly Duplex Remote Screen Change Hammermill powered by a 75 HP motor on the mill and a 20 HP motor on the blower. It saves us time and steps in servicing customers . . . and gives us a product that looks like it had gone through a grader to get a more even grind. I would recommend this mill to anyone."
Bob Armour

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☐ Magnetic Separator
☐ Cob Crusher
☐ Bucket Elevator
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How to Make a Grain Bank Pay

By John E. Bonnett
Bonnett Feed & Grain Co.

EDITOR'S NOTE: In this article the author outlines the basic structure and policy of his grain bank operation. The information was presented in an abbreviated form as an address at the 15th annual convention of the Midwest Feed Manufacturers Assn. in Kansas City. In his talk Mr. Bonnett said he would not attempt to "sell" grain banks because many have ended in failure, but said that if properly operated, such plans are a definite benefit to both the feed man and his farmer customers. The author is president of the Bonnett Feed & Grain Co. in Bushnell, Ill.

INTRODUCTION:

Bonnett's grain bank with complete feeds and bulk handling (delivery) brings to our customers: Less labor, greater efficiency and more profits.

How it works: 1. You deposit (or sign up to deposit) your grain at Bonnett's.

2. We then process your grain into one of the following complete feeds and store it in bulk at our plant: Starter—pigs up to 50 lb.; grower—pigs from 50 lb. to 125 lb.; finisher—hogs from 125 lb. to market; expectant sow—from breeding to farrowing; and nursing sow—from farrowing to breeding.

3. You withdraw your grain as needed in the form of one of the above complete ready-mixed feeds. This is done in one of the following ways: Pick up the ready-mixed feed in your truck, or we will deliver it in our truck.

4. Also, you may withdraw your grain as needed for your own custom formulas using your grain and our supplement.

Advantages:

1. Saves labor—less handling and scooping, and fewer chores. Our bulk delivery service means you can now feed your livestock by phone.

2. Saves time—(a) no waiting for grinding. Go to the head of the line and get your load of feed, or call us and we'll deliver to your farm. (b) Handle your grain in large amounts rather than a load every day or two.

3. Saves grain—no shrink or deterioration while in Bonnett's grain bank; grain fully insured while at Bonnett's, and no milling losses.

4. Improves nutrition—each formula is built from the "ground up," based on the hog's requirements (as specified by leading university nutritionists)—not a mere corn and supplement combination.

5. Improved feed conversion and rate of gain—(a) Produce more pork faster from less grain. (b) A perfectly balanced and fortified ration always requires less feed per pound of gain. (c) Nothing left for the hog to figure out—every mouthful uniform and properly balanced.

6. Less storage required on the farm—(a) Bring part of your grain to Bonnett's in the early fall. (b) Less capital investment and labor in temporary storage facilities on the farm.

7. Continuous source of feed—(a) Weather or season won't interrupt this modern, practical feeding program. (b) You can get feed any time of the day.

8. Know what you are doing—(a) Exact weights allow easy and accurate records. (b) Conversion rate and costs per pound of gain are easily obtainable. (Bonnett's will weigh and keep this record on stock being fed their feed.)

WRITTEN POLICIES:

Kinds of grain accepted: Shelled yellow corn and heavy white oats (see grade section of policies).

Moisture and grade:

1. Corn—(a) Shelled corn will be accepted into the grain bank up to 26% moisture, but it must be dried to 15% (see attached schedule of drying costs and shrinkage rate). The customer pays the cost of drying and absorbs the shrink. (b) All corn must grade No. 2 except for moisture (see above). All other corn will be refused or accepted for shipment only, commercial discounts applying.

2. Oats—heavy white, 34-lb. test weight.

Amount accepted . . . when?

1. Corn—(a) Up to 2,500 bu. of shelled corn will be accepted at one time, but arrangements should be made prior to delivery. No more corn should be delivered than will be used before new corn is available the following fall (generally Oct. 1). (b) "Early-in" customers may bring direct from the field, 20% of the total shelled corn they plan to use in the grain bank during the coming year.

2. Oats—(a) Due to Bonnett's limited storage, oats cannot be accepted until after corn harvest (Dec. 1). At that time arrangements must be made with regard to time of delivery and amount delivered.

Charges:

1. A 2¢ bu. "in" charge will be made on all grain delivered into the grain bank. No other charges will be made (except grinding and processing) if grain is ground with Bonnett supplements or used in Bonnett complete feeds.

2. A 5¢ bu. additional (7¢ bu. total) "in" charge will be made on all corn in excess of the 20% "early-in" allowed between Oct. 1 and Dec. 1. This extra charge is made to restrain a few customers from using up all our storage space at the expense of others.

3. A 2¢ bu. "out" charge will be made on all grain withdrawn as shelled corn or ground and mixed with ingredients.

4. A 3¢ bu. "out" charge will be made on all grain sold from the grain bank.

Purchases:

1. Anyone may buy corn at the posted selling price, and put it in the grain bank.

2. If corn is bought for cash, the

FIGURE 1

BONNETT'S GRAIN BANK SURVEY

(A technique that will help us to serve you better)

1. Do you feed a complete feed to your hogs after they are started?_____
2. Will a complete feed give you faster gains?_____ Cheaper gains?_____
3. Will feeding hogs in confinement give faster gains?_____ Cheaper gains?_____
4. Would you feed a complete sow feed if they would't overeat, before farrowing?_____; after farrowing?_____
5. Would you feed a complete cattle feed if you could get lower cost gains by doing so?_____
6. Have you ever heard of Bonnett's Grain Bank?_____
7. Do you understand how it works?_____ What it costs?_____
8. Which 3 of 8 advantages do you consider most important?_____
9. Would bulk delivery to your farm save you time?_____ Labor?_____
10. Do you expect to raise more corn this year than you have crib room?_____ (bushels)
11. If you sign up for the Grain Bank when would you prefer to deliver your corn?_____ (Early -- M -- Late)
12. Would you prefer to sign up now in order to take advantage of our early-in program?_____

NOTE: Everyone who allowed us to complete this survey received a one-year subscription to the National Hog Farmer; also his name was put into a drawing for a Polaroid Camera.

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Now being offered to your customers by these big ads currently appearing in . . .

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Two-cell Flashlight, complete with batteries, free with every 12-tube "Handi-Pack" of NEW FORMULA Corta-Clear Mastitis Treatment. Offer ends April 30, 1959. Minimum order for direct shipment, 6 Handi-Packs. For prices or same-day shipment, wire or write air-mail to:

...tting further spread of disease.

FREE!
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Ready to Use with every "Handi-Pack" of Dr. LeGear's NEW FORMULA Corta-Clear for Mastitis

Get this valuable premium that every farmer needs with your 12-syringe carton of CORTA - CLEAR, the new fast-acting Mastitis treatment that—*within ONE HOUR*—gives relief from pain and swelling and gets the cow back to valuable production on the milking line several days sooner.

Only 1 Treatment Needed

CORTA-CLEAR spreads to all affected tissues immediately, gets to ALL mastitis germs, including bacteria which have become resistant to other types of treatment. CORTA-CLEAR's powerful germ-killers *treat infected tissues*, not the milk. Its potent action continues on, even after the first milking, stopping the average case in *just one treatment.*

Stops Scar Tissue

CORTA-CLEAR stops scar formation immediately and prevents further damage to udder tissues.

Dr. LeGear, Inc. 4121 Beck • St. Louis 16, Mo.

FIGURE 2

REQUEST FOR GRAIN BANK STORAGE

Date. . . . . .

To: BONNETT FEED AND GRAIN COMPANY

Please reserve for me a total of..... bushels of space in your Grain Bank for my 1958 corn crop.

I promise to deliver this corn within (10) days from the time you call for it. In accordance with your "Early-In" program, I should like to deliver..... bushels in the fall.

I further agree to pay you (at your stated rates) for drying this corn if it exceeds 15.5% moisture and to stand all the shrinkage thus incurred.

Signed.....

Accepted.....
BONNETT FEED AND GRAIN CO.

"in" charge is reduced to 1¢ bu.; otherwise the regular "in" charge of 2¢ bu. will be made.

3. All new corn purchases for the grain bank must be negotiated with the manager.

Overdrafts:

1. To insure a continuous supply of feed for grain bank members, overdrafts must be met within 10 days after they are called for—½¢ bu. per day will be charged for delays beyond this time.

2. When a grain bank customer runs out of corn and an overdraft develops, he must settle it by the end of that month at that day's price. From then on he will buy each load of feed outright and his grain bank account will be closed until, or unless, he deposits more corn.

3. New corn will not be accepted as a replacement for old corn used. New corn will generally be accepted around Oct. 1 (exact date will be posted). Of course, all overdrafts must be settled before new corn will be accepted.

(Note: These policies are subject to change without notice.)

A DEFINITE FEEDING PROGRAM:

A customer deserves and expects to be presented with a definite feeding program when he asks, "What's this I hear about your grain bank?" At this point most grain bank operators have two alternatives:

A. Offer standard mixes of corn and supplement combination, e.g.:

(1) 16-4: 80% corn and 20% supplement—for pigs up to 100 lb.

(2) 17-3: 85% corn and 15% supplement—from 100 lb. to 150 lb.

(3) 18-2: 90% corn and 10% supplement—for hogs from 150 lb. to market.

B. Offer a series of complete feeds built from the "ground up" (often pelleted) with no indication of grain content, e.g.:

(1) Starter—pigs up to 50 lb.

(2) Grower—shoats from 50 lb. to 125 lb.

(3) Finisher—hogs from 125 lb. to market.

(4) Other complete feeds such as sow, sheep, etc.

The advantages of the first alternative are: (1) Easy to explain; (2)

FIGURE 3

BONNETT'S SCHEDULE OF COMMERCIAL DISCOUNTS, DRYING RATES, AND SHRINKAGE

Moisture %	Commercial Discount Total/bu.	Drying Rates Total/bu.	Shrinkage* %
	¢	¢	
15.0 - 15.5	-	-	0.6
15.6 - 16.0	1	1½	1.2
16.1 - 16.5	2	3	1.8
16.6 - 17.0	3	4½	2.4
17.1 - 17.5	4	5	3.0
17.6 - 18.0	5	5	3.5
18.1 - 18.5	6	5	4.1
18.6 - 19.0	7	5	4.7
19.1 - 19.5	8	5	5.3
19.6 - 20.0	9	5	5.9
20.1 - 20.5	10	5	6.5
20.6 - 21.0	11	5	7.1
21.1 - 21.5	12	5	7.6
21.6 - 22.0	13	5	8.2
22.1 - 22.5	14	6	8.8
22.6 - 23.0	15	6	9.4
23.1 - 23.5	16	6	10.0
23.6 - 24.0	17	6	10.6
24.1 - 24.5	18	6	11.2
24.6 - 25.0	19	8	11.8
25.1 - 25.5	20	8	12.4
25.6 - 26.0	21	8	12.9

NOTE: All rates are subject to change without notice.

* Shrinkage calculated from Minary Tables 2nd edition.

AT LAST

YOU CAN HAVE ACCURATE DOCKAGE PERCENTAGE

in one quick glance . . .

ARMSTRONG PERCENTAGE AND DOCKAGE SCALE . . . eliminates pencil work. Calculates percentages from weights of 250 to 500 grams. Fast and foolproof. Only one of its kind.

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Now you can install a new, more powerful plate magnet at the very lowest cost. It's the new Stearns Indox V plate magnet. This magnet is made from powerhouse Indox V, an oriented ceramic — a Stearns exclusive. Pound for pound, size for size, it's the best, lowest-cost plate magnet in its class. It's the talk of the industry.

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In most instances, this Stearns Model 50 can replace any plate magnet you now have without changes in equipment design. It can't be beat. It's a cost saver. It's a livestock saver. It's the champ for pulling out machine-wrecking, livestock-killing tramp iron.

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☐ I want a Stearns representative to call.

Name.....
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City.....
State.....

simpler to operate; (3) lends itself to the use of branded supplements.

The advantages of the second alternative are: (1) Generally better nutrition especially in the finisher stage; (2) greater flexibility in formulation, thus lower costs; (3) better markups are possible on total tonnage processed.

The second method is more complicated, sometimes more profitable, but not entirely compatible with the grain bank concept. For example, in the first case, a farmer comes in for 2,000 lb. of 16-4, his corn account is reduced by 1600 lb. and he pays for 1600 lb. grinding and 400 lb. of supplement, and the transaction is completed.

A similar example using the second method (complete feed) might go like this: Farmer buys 2,000 lb. grower—$65; trades in 2,000 lb. corn @ 2¢ lb. (market that day) — $40; is charged $25.

In this case the corn must be given a dollar value and then used to reduce the customer's account receivable; no reference being made to the actual amount of corn used in the mixture. This method is more difficult to explain, but if properly handled, can offer the operator greater net profits at no extra cost to the feeder.

EFFICIENT BOOKKEEPING SYSTEM:

It may be either a hand-posted or an electrical system. All that's important is that records be current and accurate so far as the grain bank depositor is concerned.

We have found that most operators use a ledger form similar in principle to the following, and they post to it directly from their sales ticket.

Date	In	Out	Balance
John Doe			Corn

PLENTY OF STORAGE:

Fundamentally, sales tend to be lost when goods are unavailable at the time a prospect is ready to make a purchase. The grain bank business is no different, and the following inventory ratios have been developed from our experience:

	Inventory turn—Grain	Inventory turn—Finished feeds
Desirable	2 to 3 wk.	2 days
Workable	10 days	1 day
Costly	less than 1 wk.	less than 1 day

MODERN PROCESSING EQUIPMENT:

Just enough and of the right kind to allow you to give them what they want, when they want it. Don't overlook pellets!

ACTIVE PROMOTIONAL PROGRAM:

1. Initial: We found it most effective to survey all prospective grain bank users in our area prior to initiating the actual service. Such a survey served three chief purposes: (a) Gave us an opportunity to educate our prospects on the many benefits they could derive by using our grain bank; (b) sell them on the idea of signing up now for space in our grain bank, and (c) predict and prepare for future business derived from the new grain bank service.

We would recommend that you use a printed survey form and space request form. Prospects should sign the latter. (See Figures 1 and 2.)

Continuing: (1) Advertise through your choice of media facts concerning your grain bank coupled with the user-benefits that result. (2) Record and publish actual feeding records obtained by some of your customers (informal leaders preferable). This type of advertising will lend proof of the many benefits you have to offer through your grain bank program.

GRAIN DRYER:

Often a dryer is thought of as "extra baggage" when considered in connection with setting up a grain bank. This isn't the case if you're in business for the long pull. A dryer will build confidence among your customers by eliminating three very common problems:

1. Will allow you to take part of their corn at harvest (early-in).
2. No discrimination among customers because everyone gets credit for putting No. 2 corn in, and receives the same or better in return.
3. No spoiled feed resulting from wet or inferior grain.

(Note: See Figure 3 for a schedule of costs and shrinkage.)

BULK DELIVERY

This service may well be an optional part of your grain bank program, depending upon your particular situation and local demands. Also, it's a type of service that can be added later if demanded.

We have found it a real sales aid to be able to quote the price of a feed delivered into the man's feeder. Furthermore, it is our opinion that the demand for this brand of service will continue to grow.

SUMMARY—WHAT IT TAKES:

1. Written policies.
2. Definite feeding program.
3. Efficient bookkeeping system.
4. Plenty of storage—grain and finished feed.
5. Modern processing equipment.
6. Active promotional programs.
7. Grain dryer.
8. Bulk delivery.

Extension Director Talks at Sales Event

CONCORD, N.H. — Dr. Harry Keener, director of extension service, University of New Hampshire, was the principal speaker at a sales meeting held by Wirthmore Feeds, Inc., at the New Hampshire Highway Hotel.

Representatives from the feed manufacturing firm's home offices and research center, Waltham, Mass., participated in the program, part of a continuing series for keeping field representatives informed on the latest developments in feeding and management of poultry and livestock.

Build 100% repeat sales with WAYNE CALFNIP

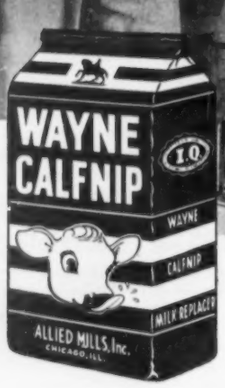
Here's What "Hersh" Haradine, Owner-Manager of Harvey's Milling Co. Carson City, Mich., says:

"Once you sell a customer Calfnip, you don't have to worry about him switching to any other brand." Using the specialty feed, Wayne Calfnip milk replacer, this Michigan Wayne Feed Dealer has been able to build total tonnage through repeat sales.

"Hersh" can show steadily rising calf feed tonnage to prove it. Last fall he shipped his first solid carload of Calf Feeds . . . and sold it in just over 2 months!

"Hersh" makes full use of the Wayne Feeding Programs and aggressive merchandising to tell the story of Research Proven Wayne Feeds and their use. Local newspaper and direct mail advertising, plus feeder meetings and strong resale, are building business for him.

Join other progressive Wayne Dealers who are using *Wayne Calfnip* to help make full-line customers of their feeders. Calfnip is ideal for calves, pigs, puppies, lambs and other small animals.



WAYNE FEEDS

Learn more about "Out in Front" Wayne Dealer opportunities. Write: Allied Mills, Inc., Service Offices, Fort Wayne 1, Indiana.

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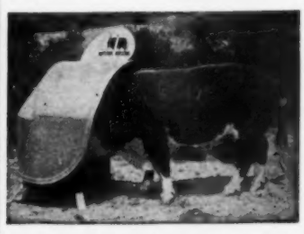

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Small wonder TRITHIADOL, Sterwin's superior, "use-proved" coccidiostat, gives top profits to broiler growers. For with TRITHIADOL, *control* goes hand in hand with *feed conversion*.

TRITHIADOL is the *only* coccidiostat that effectively controls *all* important species of coccidia while giving top feed conversion.

DOLLAR AND CENTS proof of this exclusive "double-feature" is reflected in the extra profits (up to $40 per 1000 birds) registered by TRITHIADOL in comparative tests with other leading coccidiostats.

Tested and proved in laboratory and field tests . . . TRITHIADOL pays off where you want it to . . . in *commercial use*. Sterwin's TRITHIADOL is "use-proved" in every poultry growing area, in every growing season . . . under widely varying growing conditions.

IN REPLACEMENT CHICKENS—TRITHIADOL controls *all* commercially important species of coccidia . . . allows development of *early immunity* which continues into laying period.

SEE YOUR STERWIN TECHNICALLY-TRAINED REPRESENTATIVE or write . . . wire or phone collect to:

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2. Completely safe for poultry; harmless to other warm blooded animals.
3. Superior feed conversion and weight gain.
4. Permits immunity to develop early.
5. Displays no adverse effects on egg production, shell or interior quality.
6. Comparatively no effect on hatchability or fertility.
7. Is compatible with all commonly used feed ingredients.
8. Stable, free flowing, easily blended with feeds.
9. Effectively reduces tapeworm and large roundworm burden—a substantial aid in any worm control program.

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Feed Service BULLETIN BOARD

IDEAS TO HELP YOUR CUSTOMERS

Advice on Flock Sizes

Poultry producers with questions about how large their enterprise should be for top efficiency may be able to make use of information along this line supplied by Dr. Arthur T. Ringrose, poultry specialist, Virginia Polytechnic Institute.

He says that when poultry is to be one of the main farm enterprises requiring from one fourth to one half the labor of one man, the minimum sized unit should be 10,000 broilers (in each of four flocks a year); 1,000 layers or breeders, plus the raising of replacements, or 2,000 turkeys (roasters, one flock a year, and broiler turkeys, two or more flocks a year).

If the poultry business is to be full time for the labor of one man, the minimum sized unit should be 30,000 broilers (in each of four flocks a year); 4,000 layers, plus the raising of replacements, or 5,000 turkeys (one flock of roasters or two or more flocks of broilers a year).

◆

Milk Tank Cleaning

Rinsing, scrubbing and rinsing are the three important steps in cleaning a bulk milk tank, says Borden Ells, extension dairyman at New Mexico State University.

Cleaning starts with rinsing, using a mixing "T" with the water at about 100°. The dairyman should apply pressure and use an abrasive to remove the milk film.

For washing, Mr. Ells recommends using washing compound and hot water (not less than 110°). Then all areas should be brushed thoroughly and again rinsed with hot water (120°). The dairyman must keep tank covers closed after washing.

◆

How to Keep Eggs Clean

Egg producers and consumers will be happier if eggs are gathered clean from the laying house instead of being washed clean, in the opinion of Prof. Joe W. Sicer, Purdue University poultry extension specialist. Washed eggs may lose some of their quality.

Prof. Sicer points out that 99% of all eggs are clean before they touch the nest, and a high percentage of them can be kept clean if good management practices are followed.

Since eggs laid in dirty nests will be soiled, the nesting material must be kept clean. This job is made easier by keeping a supply of clean nesting material close to the nests. Chopped straw, shavings, ground cobs or a number of commercial nest materials may be used with satisfaction.

Clean, dry litter on the floor is necessary. If a hen has dirty feet when she enters the nest, soiled eggs will probably result. Welded wire under the perches to prevent the hens from walking over the accumulated droppings is also essential.

Prof. Sicer suggests these other practices:

At least one nest to every five hens; a piece of corrugated cardboard the size of the nest bottom under-

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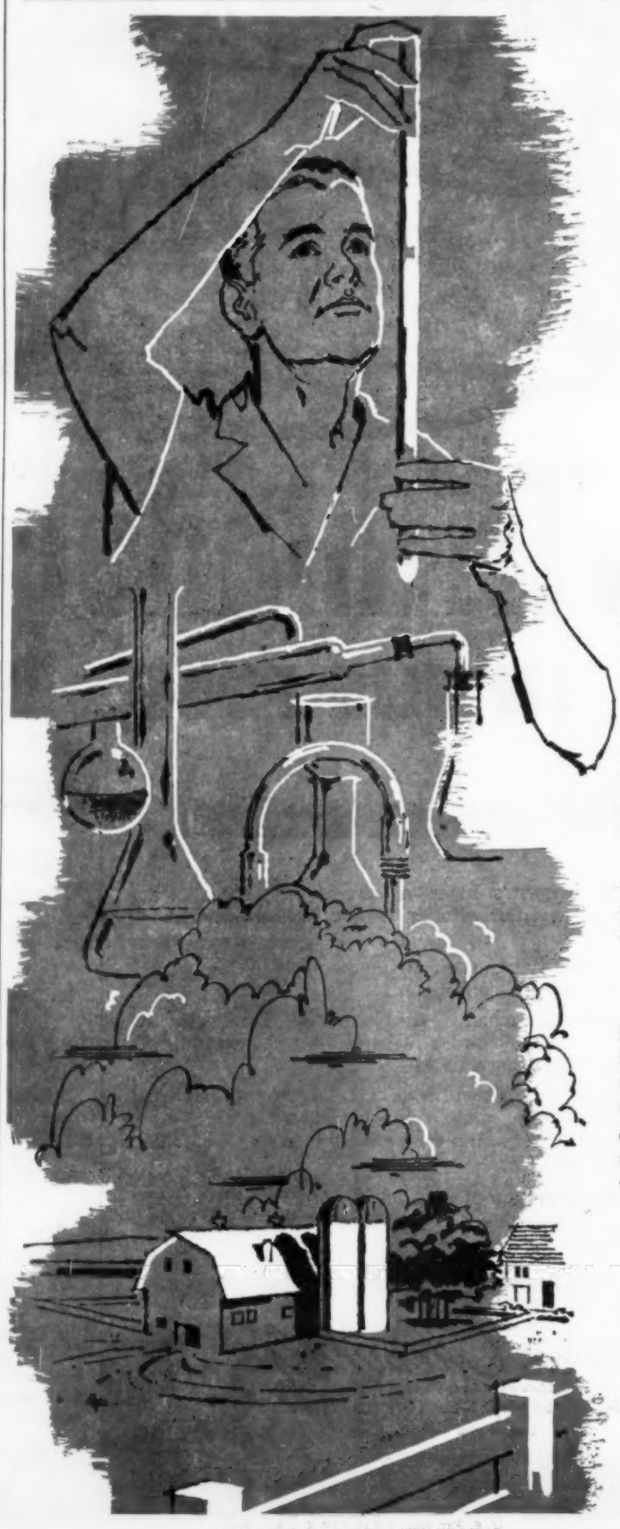

The Influence

Hemorrhagic conditions due to vitamin K deficiency have been largely eliminated. The widespread use of water-soluble, easily-absorbed and more potent, synthetic vitamin K has played a major role in this success.

One gram of KLOTOGEN F (Abbott's stabilized menadione sodium bisulfite) per ton of feed provides protection under most conditions. This level of Abbott's highly-active form of vitamin K has been used with satisfactory results by feed companies for several years.

But cases of hemorrhaging still arise, either as one of the symptoms or as one of the results of disease or other stresses. Under these conditions, higher levels of vitamin K may be required.

Nutrition suffers when diseases—or other stresses—strike

Birds need all of their strength to throw off the infection and to make rapid recovery. The additional stress of either the disease or drugs used to treat the condition may increase the need for certain nutrients. Sulfa drugs clearly increase the need for vitamin K in feeds at a time when vitamin K is low[1,2]. When adequate vitamin K

neath the nesting material so that the eggs will have a soft spot on which to be dropped if nesting material is scratched away; nesting material at least three inches deep; prompt removal of broody hens; darkening nests, and gathering of eggs at least three times daily.

◆

Leptospirosis Threat

The best way to prevent spread of leptospirosis, the disease that causes abortions and sometimes deaths, is for the swine or cattle breeder to keep infected animals out of healthy herds, according to Dr. L. E. Hanson, College of Veterinary Medicine, University of Illinois. He advises livestock producers to be especially careful about newly purchased animals, since they are often the source of leptospirosis infection. Blood tests will give accurate diagnosis for the disease, detecting carrier animals that appear healthy, but are really dangerous.

In the mild form of the disease, infected animals may show no signs except abortion. In severe cases there may be yellowing of the eyes and mouth membranes, loss of appetite, blood-colored urine and rapid deaths in a herd.

◆

Buying Started Pullets

Tips for the producer who wishes to purchase started pullets with the greatest margin of safety were offered in a recent issue of Featheredfax, published by the department of poultry husbandry, University of Massachusetts.

These points were noted:

"(1) Plan the replacement schedule ahead, as far ahead as if the brooding were to be done at home.

"(2) Do business only with a grower in whose reputation he has confidence.

"(3) Specify strain, source of stock, feeding program and immunization schedule.

"(4) Enter into a formal contract with the grower, making certain that the salient points relative to management, cost, payment schedule and date and conditions of delivery be spelled out clearly.

"(5) Be willing to 'pay as they grow.' This practice tends toward better grower-buyer confidence, leaves no excuse for short cuts in management and makes it easier on the purse strings at delivery day."

◆

Cutting Farrowing Costs

Lower building and equipment use costs made possible by more continuous utilization of the hog raiser's facilities give multiple farrowing systems a money-making edge over the two-a-year litter systems.

Prof. R. H. Bauman, Purdue University agricultural economist, says that in central Indiana tests one additional pig saved for each litter resulted in a 50¢ reduction in the cost of producing 100 lb. pork. The cost of producing a pig to weaning was $9.

Tranquilizers Reduce Losses from Stress, Manufacturer Reports

KANSAS CITY—Routine use of tranquilizers on cattle can add $100 million a year to the profits of the nation's livestock industry, according to Jensen-Salsbery Laboratories, Inc., Kansas City.

The firm bases this estimate on reports compiled from farmers and feedlot operators who use tranquilizers. The users save up to $5 a head in reducing weight loss, shipping fever and bruising, the report said. In addition to these advantages, the report pointed out the advantages of time saved in handling the tranquilized animals and in faster feedlot adjustment.

Records kept by the firm since 1957, when it first introduced its tranquilizer, Diquel, show that the tranquilizer minimizes stress, the key to many loss factors, according to the report.

Diquel was approved recently for pre-slaughter use. "With this approval, the benefits of tranquilization can extend up to the time of slaughter," according to Dr. Vladimir Dvorkovitz, president. "In addition, tranquilizers are expected to reduce the incidence of dark-cutting meat. They may also produce more tender meat."

The report said injection of the tranquilizer prevents excitement and fright, which causes the blood vessels to become gorged. Frightened animals don't bleed well, the report said, and dark cutting and spoilage result.

Reduced shrinkage is the most dramatic accomplishment of tranquilizers, the report said. Shrinkage per head averages from 6 to 8%, according to the report, but tranquilizers can reduce this to 2% in many cases and even lower in others.

Dr. Dvorkovitz said tranquilizers are definitely indicated for short hauls. He referred to government figures which show that 75% of cattle shrinkage occurs in the first two hours of shipment.

Tests also show that shipping fever is reduced and that cattle adjust to a new home more readily while tranquilized. Another adjustment made more easily with tranquilizers, according to the report, is the separation of calves from their mothers at weaning.

Indiana Broiler Income Tops 1957 by 7%

LAFAYETTE, IND. — Indiana commercial broiler growers grossed $28,708,000 from sale of their product in 1958, according to state-federal agricultural statisticians at Purdue University. This represented a 7% increase over 1957 gross income.

Prices received — an average of 18.8¢ lb. liveweight—were about a half cent less than in 1957. But production in Indiana, totaling 44,912,000 birds, rose 6% over the 1957 total. The average weight per bird sold was 3.4 lb.—one tenth pound more than in 1956 and 1957.

Indiana ranked 12th among the 22 top broiler producing states.

Research Progress Report: **KLOTOGEN-F®**

of Disease and Other Stress on Vitamin K Requirements in Poultry Rations

is given, counteracting its most specific stress effect, the sulfa drug hits the parasite rather than the host.

Harms and Tugwell have shown that vitamin K-deficient birds readily bleed to death when subjected to coccidiosis[3]. But when birds had adequate vitamin K prior to infection, mortality was negligible[3,4]. This finding was duplicated in our own laboratories[5].

Nelson and Norris concluded that some specific feed additives increase the requirement for vitamin K[6]. They suggest that at least two grams per ton of menadione sodium bisulfite be used to increase the vitamin K activity of rations containing these feed additives.

In trouble-shooting feeds—particularly where high levels of sulfa drugs are used to arrest coccidiostatic conditions—the use of 2 to 4 grams of KLOTOGEN F per ton provides a more effective level of anti-hemorrhagic protection than the 1-gram level. With renewed use of sulfa drugs in therapeutic feeds, such a change in recommendations would be warranted. Abbott has had recent occasion to recommend 4 grams per ton of KLOTOGEN F in specific cases.

Nelson and Norris found that 7.5 grams KLOTOGEN F per ton provided adequate anti-hemorrhagic protection when 0.125% sulfaquinoxaline was used[6]. This is in accord with *our* published findings[2].

Thus, studies are straightforward in a few diseases—such as coccidiosis—where the parasite is handy to use. Here, one can define all aspects of the problem and study each aspect individually. However, a major problem still exists in finding where nutrition fits into susceptibility and severity of other diseases, such as C-R-D.

There may not be many instances where diseases, other stress, or drugs create a need for higher levels of vitamin K in rations. But where such instances arise, use of more than the 1-gram level of KLOTOGEN F can be recommended with safety, and the recommendation based on experimentally-proved results.

As further research is completed on the broader aspects of vitamin K usage, Abbott will report the findings.

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HATS MAKE THE MEN—Enthusiastic participants in the "South of the Border" party during the recent American Dehydrators Assn. convention in Houston were (left to right): W. H. Nigh and Harry Long, both with W. H. Nigh Co., Houston; Ray Cox, Acme Traffic Service, Kansas City; R. M. Fudge, the Fudge Co., Heber, Cal., and Harold E. Clark, Consolidated Mills, Blissfield, Mich.

Exhibit Sent Abroad For Export Promotion

NEW YORK — A mobile exhibit which includes a giant-size walk-through replica of a steer has been shipped abroad for showings before European farmers this spring. The exhibit is part of the export promotion of U.S. livestock, feed grains and oil seeds which the U.S. Department of Agriculture is conducting in cooperation with feed, grain and soybean industries.

The exhibit is carried on four trailers. Two of the expandable trailers are devoted to non-technical exhibits showing farmers how balanced feed will enable them to get increased profits from hogs, cattle and poultry. A third trailer serves as office, library, motion picture projection room and conference room for visitors. A two-ton replica of a Hereford steer, "Champ," is carried on the fourth trailer. "Champ," loaned by Ralston Purina Co., St. Louis, is open at each end, enabling visitors to listen to the heartbeat and see the digestive and other principal organs simulating real-life function.

Walter Dorwin Teague Associates, New York, designed the traveling exhibit to dramatize the benefits of balanced high quality livestock feeding, thereby stimulating sales abroad of crops being stored in great quantities in the U.S. Reynolds Feal Corp. built the exhibit.

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It is agreed that if we order more sets for our Salesmen and Dealers we are to only pay the quantity rate for the first set.

Firm Name_____
Address_____
City and State_____
Individual_____

Terephthalic Acid 'Most Promising,' Texas Report Says

COLLEGE STATION, TEXAS — Terephthalic acid is the "most promising" of certain compounds for the potentiation of antibiotics in feeds, Jack D. Price, control registrar, Texas Feed Control Service, reported in a recent issue of Texas Feed Service Report, published quarterly by the Texas Agricultural Experiment Station.

Mr. Price explained that chemically, terephthalic acid is a white solid compound, relatively insoluble in common organic solvents. The acid has been used in the formation of polyesters with glycols which are made into plastic films and sheets, and also in analytical chemistry.

In his article, "Antibiotics Potentiation With Terephthalic Acid," Mr. Price noted that Dr. E. H. Peterson, associate professor and associate veterinarian, department of animal husbandry and veterinary science, University of Arkansas, found that terephthalic acid would produce a two to four-fold increase in the antibiotic level for the blood serum of chicks. Dr. Peterson reported that the optimum level of terephthalic acid was .4 to .5%, or approximately 8 to 10 lb. per ton.

Wrote Mr. Price, "Dr. Peterson found that the use of terephthalic acid in combination with chlortetracycline or oxytetracycline produced an increase in the serum antibiotic levels. However, the antibiotics, penicillin and bacitracin, which are absorbed from the intestine in very small amounts or not at all, were not affected in this manner by the incorporation of terephthalic acid."

Various Levels Fed

Dr. Peterson fed various levels of terephthalic acid and observed no detrimental effects on growth rate or feed conversion under the conditions of his experiments. He reported that levels of 2% terephthalic acid were very detrimental to the growth rate and levels of 3 to 4% resulted in a cessation of growth.

Reporting at a symposium at the 1958 Texas Nutrition Conference, Dr. Peterson said he studied the effect of antibiotic and terephthalic acid combinations with birds experimentally infected with the coccidia Eimera tenella, and reported that .5% terephthalic acid with 195 gm. of chlortetracycline was more effective in the prevention of the symptoms of coccidiosis than was 780 gm. of the antibiotic alone. He also reported that terephthalic acid potentiated 250 to 500 gm. of chlortetracycline in the control of PPLO.

Other data presented at the symposium revealed that a number of organic acids have been tested and that excessive levels of calcium in a diet will produce a reduction in the antibiotic level in the blood, liver and urine of chicks. It was reported that an increase of phosphorus in the diet or a reduction of the calcium level will result in an increase of the antibiotic level in the blood.

In his report of the symposium, Mr. Price wrote: "It has been known for some time that very high levels of antibiotics are effective against diseases other than those for which they are now incorporated into feeds to combat. However, the antibiotic level which must be used for the prevention and treatment of these diseases is so high that it is not economically feasible to use the antibiotics for these purposes, particularly since other drugs are effective against many of these diseases."

Considered a Drug

Mr. Price said the Federal Food and Drug Administration considers terephthalic acid a drug, when recommended for use in this manner. Therefore, under the new drug provision of the Federal Food, Drug & Cosmetic Act, it will be necessary that adequate data be obtained on the safety of its use.

At last report, there had been no research data or formal proposals submitted to the Federal Food & Drug Administration for the use of terephthalic acid or other potentiating agents in combination with antibiotics. Mr. Price believes that the use of potentiating agents in commercial feeds will not come for a considerable time, depending on the success in gathering research data which will be necessary for clearance.

He cautioned feed manufacturers against use of terephthalic acid in commercial feeds until proper clearance has been obtained.

Farmers Union Opens New Omaha Warehouse

OMAHA—A new Farmers Union Exchange warehouse opened here recently will store more than 3,000 kinds of farm supply items.

The building, covering 20,000 sq. ft., was dedicated by Wilbur Jenny, general manager. The Farmers Union is a cooperative owned by about 300 cooperatives in Nebraska.

President Elton Berck said another warehouse will be added within 18 months if the present increase in business continues.

Canada's Feed Freight Aid Over $291 Million

OTTAWA — Canada's Department of Agriculture has announced that Canada has paid out $291,208,214 for freight assistance on western feed grains shipped into eastern Canada and British Columbia. The figure covers 45,386,030 tons shipped between October, 1941, when the assistance went into effect, and Dec. 31, 1958. The average rate per ton was $6.41 during the period.

The federal government increased the subsidy Dec. 1 to help take care of a 17% increase in freight rates granted to railroads to cover salary increases.

Of the total, the four Atlantic provinces claimed $52,744,976 in assistance; the two central provinces, $210,143,733, and British Columbia, $28,320,505. The livestock and poultry feed involved originated in the prairie provinces.

N. K. Parrish

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With only two Butler Bulk-O-Matic® tanks like the ones pictured above, you can get started in the bulk feed business, earn extra profits, effect substantial savings by storing and handling feed the modern bulk way.

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Today, many feed manufacturers are cooperating with their dealers, helping them develop Butler Bulk-O-Matic systems to fit their needs. For full details on Bulk-O-Matic tanks—the low-cost way to handle bulk feeds—contact your feed manufacturer or write the Butler office nearest you.

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Mr. Sears has done it again!

For the second year in a row his calves, creep-fed on feeds with Terramycin *have stood in the winner's circle at the Chicago Feeder Show*

His Reserve Champions actually brought 10¢ a lb. more than the Grand Champions. Veteran feeder Sears took Grand Champion honors at the 1957 show with another lot of calves creep-fed on feeds containing Terramycin.

Sears reports his Terramycin-fed calves, "had a much better coat of hair, showed more bloom, were more thrifty and healthy". He attributes this extra condition as one of several factors resulting in his top showing both years.

Creep-feed trials with Terr
up to 14% faster; use feed u

Sears is one of several cooperating ranchers who have tested creep feeds with Terramycin under on-the-range conditions. These ranchers paid strict attention to trial procedures and kept accurate records.

Suckling calves were fed a complete pelleted creep feed containing Terramycin supplied by feed companies in the area. Complete details of the test results are shown in the box below.

Besides special feeder trials, herd owners all over the country report the extra performance from creep-feeding calves with feeds containing Terramycin. Calves gain faster, feed efficiency is greater and they show more bloom and condition when they enter the feedlot. It's a powerful story for selling your customers and prospects. Get full details from your Pfizer representative.

1 **Redmond Sears, Merriman, Neb.**

TRIAL RESULTS

	Control	TERRAMYCIN 40 gm/ton
Number of calves	33	119
Days on creep	81	81
Average initial weight	245	243
Average daily gain	1.98	2.22
% increase, avg. daily gain		12.12
Feed per lb. of gain	1.49	1.37
% increase, feed eff.		8.05
Feed cost per lb. of gain	$ .0436	$ .0428
Net profit on gain	$41.02	$46.30

(Based on selling price of $30/100. Control feed $58.50/ton. Terramycin feed $62.50.)

2 **Floyd Casement, Sedan, Kansas**

EFFICIENT FEEDERS

	Control	TERRAMYCIN (50 gm/ton; 30 gm/ton during latter part of trial)
Number of calves	87	118
Days on creep	67	67
Avg. initial weight	421.5	420
Average daily gain	1.71	1.8
% increase avg. daily gain		5.85
Feed per lb. of gain	3.55	2.62
% increase feed eff.		26.20
Feed cost per lb. of gain (Control feed $62.10/ton Terramycin feed $66/ton)	$ .1102	$ .0865
Cost of gain	12.62	10.47
Net profit on gain	16.00	19.78
% increase net profit on gain		23.62

3 **Dewey Truitt, Carnegie, Okla.**

FAST GAINERS

	Control	TERRAMYCIN 40 gm/ton
Number of calves	22	79
Days on creep	102	102
Average initial weight	338	342
Average daily gain	1.84	2.11
% increase avg. daily gain		14.67
Feed per lb. of gain	4.61	3.45
% increase feed eff.		25.16
Feed cost per lb. of gain (Control feed $62.86/ton Terramycin $66.86/ton)	$ .1244	$ .0998
Net profit on gain	23.65	32.29
% increase net profit on gain		36.53

Reserve Grand Champions, 1958 Chicago Feeder Show. This Angus lot, shown by Redmond Sears, Merriman, Nebraska, brought $65.75 a hundred, over $10 more than the Grand Champions.

'amycin show calves gain ıp to 26% more efficiently

Advantages to Help Sell Your Terramycin-Fortified Creep-Feeding Program

1. Extra pounds—additional weights of 50-125 lbs. at weaning time over noncreep-fed calves.
2. Higher calf prices—calves showing better condition, thriftiness and hair coat bring premium prices.
3. Cows in better condition after weaning—cows with creep-fed calves are often 35-40 lbs. heavier after weaning, and in better shape for wintering and the next gestation period.
4. More uniform calves—calves from poor milkers or heifers get all the nutrients they need to keep pace with other calves.
5. Shipping losses cut—calves are in better condition to withstand stresses of truck or rail shipment; less chance of shipping fever.
6. Less shrinkage—calves have learned to eat by weaning time and settle down quicker.
7. Quick adjustment to feedlots—dry feed is not strange to calves; less subject to digestive disorders and shipping fever.

'reep Feeds with **potent** Pfizer **Terramycin**®

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CONVENTION PARTY—This group, shown at a party sponsored by Merck & Co., Inc., Rahway, N.J., in connection with the Midwest Feed Manufacturers Assn. convention in Kansas City are (left to right): Mr. and Mrs. Phil Sheridan, Martin Milling Co., Malvern, Iowa; Cliff Richards, Merck & Co., Omaha; Mr. and Mrs. Dave Martin, Martin Milling Co., and Mr. and Mrs. Ray Ammon, The Quaker Oats Co., St. Joseph, Mo.

Vertical Integration In Livestock Industry Topic for Forum Talk

MACON, GA.—Vertical integration is beginning to appear in livestock production because "certain economic problems have not been solved," said Harold F. Breimyer of the USDA's Agricultural Marketing Service in a talk before the recent Southern Farm Forum meeting in New Orleans.

Mr. Breimyer said integration in the livestock industry may expand slowly, the extent of growth depending on the traditional system of American livestock production to find a way to solve these problems. He said efforts to bring farm and non-farm parts of the economy closer together arise because of the increased demands being made on the farmer and existing marketing systems.

"Consumers are becoming more exacting as to the kind and quality of food they want," he declared, "and retailers are going into specifications buying. And efforts are being made to reduce seasonality in farm production to maintain an even flow of products throughout the year."

Because livestock production does not lend itself readily to mass procedures, vertical integration will come more slowly to the livestock industry than in the poultry business, Mr. Breimyer said.

While anticipating some increase in integrated production of hogs, Mr. Breimyer expressed the opinion that "for some time to come it will not seriously threaten the traditional hog-producing industry."

"Custom feeding of cattle and contract selling of feeders may increase," he continued, "but, except for the feeding operation, I believe that beef cattle may be the least susceptible of all livestock to vertical operation."

Mr. Breimyer cautioned farmers "to be careful as to the kind of situation into which they may get themselves," since a farmer who is not a good negotiator may be better off without a contract.

New Kentucky Swine Regulation Explained

LEXINGTON, KY.—A swine sanitation regulation put into effect recently by the Kentucky State Board of Agriculture was clarified here by Ben J. Butler, Kentucky commissioner of agriculture.

In calling for clearer understanding of the measure, Mr. Butler said, "there have been many false rumors started about it, but the people who really desire to see the swine industry progress can easily understand its merit."

The regulation requires the inspection of all hogs moving from livestock markets, stockyards and premises where swine are collected for resale.

"Those moving to regular slaughtering establishments require no further special handling," he said. "Those moving back to the farm must either be vaccinated for cholera, treated with anti-hog cholera serum, or have a permit to move without vaccination."

The regulation was designed to protect the state's swine industry, particularly the feeder-pig portion of it, Mr. Butler said. Without it, he declared, "We could well have found our hogs facing embargo by other states."

Permits to move without vaccination are obtained in one of these ways: (1) Through the buyer's veterinarian before the sale; (2) from the state veterinarian's office, and (3) for out of state buyers, the permit can be obtained through their respective state veterinarian's office.

If the animals move without vaccination on permit they are automatically placed under quarantine on the farm until they are vaccinated for cholera "or until such time as an authorized representative of the livestock sanitation division of the state department of agriculture can check them to see that no disease has developed," he said.

Hogs moving back to the farm for slaughter require only a signed statement from the purchaser that he will slaughter them, Mr. Butler said.

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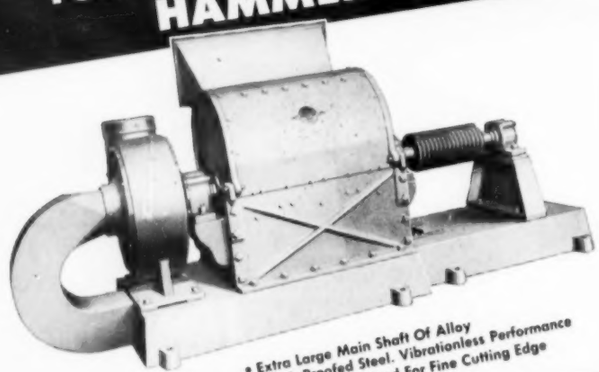

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Allen Strother

NUTRITIONAL DIRECTOR—Lorne F. Van Stone, president, Uncle Johnny Mills, Houston, Texas, has announced the appointment of Allen Strother, who has had experience in animal nutrition and in teaching livestock management practices, as nutritional director for the firm. Mr. Strother will be in charge of Uncle Johnny Mills' laboratories. A native of Sweetwater, Texas, Mr. Strother obtained a B.S. degree from Texas Technological College and was awarded an M.S. in animal nutrition by the University of California. After teaching at the University of California, he became nutritionist for the California Cotton Oil Corp., Los Angeles. Returning to Texas in 1958, Mr. Strother developed formulas for beef cattle fattening on the 500,000-acre ranch of the Burnett Estate, Fort Worth.

New Hampshire Farm Tax Relief Proposed

CONCORD, N.H. — Enactment of state legislation to eliminate present taxes on farmers' poultry and livestock is being sought by the New Hampshire Farm Bureau Federation, according to an announcement by Alfred E. French, managing director.

He said the federation's board of directors has declared that New Hampshire farmers must have this relief in order to compete with Massachusetts and other states where the taxes have been removed or considerably reduced.

Mr. French noted that Connecticut has eliminated its tax on poultry and livestock and Massachusetts has reduced its tax to a minimum $5 rate, compared with an average of about $50 in New Hampshire. It is with farmers from these states, he said, that New Hampshire flock and herd owners must compete daily. He said the federation is convinced the relief can be granted without the imposition of any new replacement taxes.

Plant Starts Operation

FOREST, MISS. — Forest's third processing plant, the locally-financed Forest Packing Co., is starting operations, announced Jack Elliott, manager. Initial employment will be about 90 persons. H. D. Chandler is plant superintendent.

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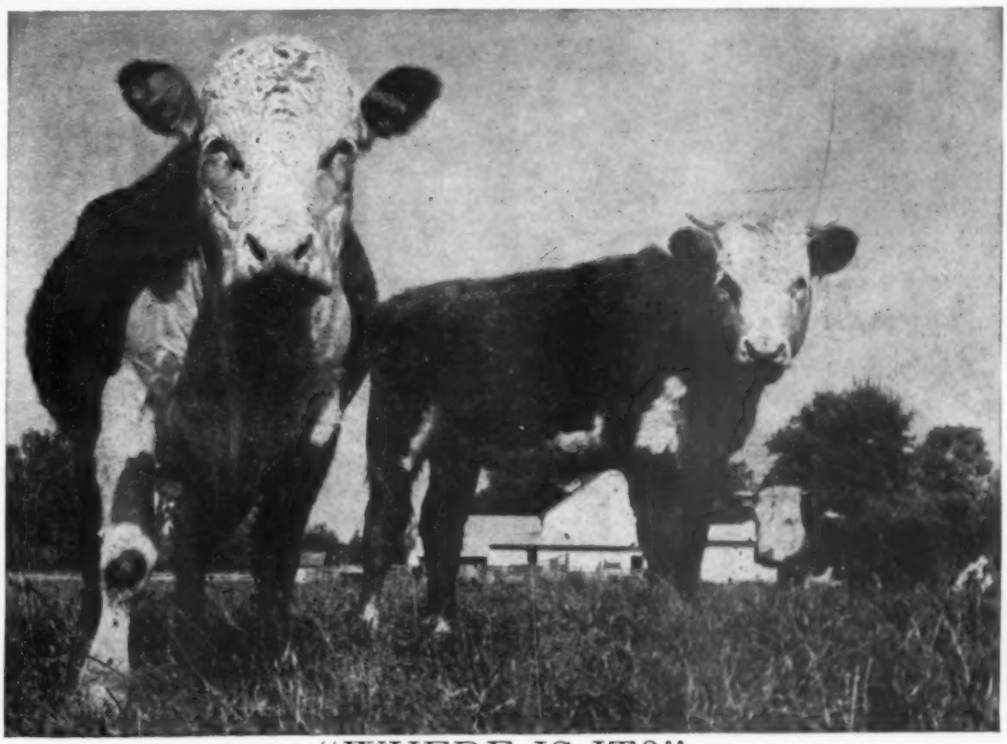

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1 NEW DISPLAYS SHOW HOW TO LOWER FEED COSTS!

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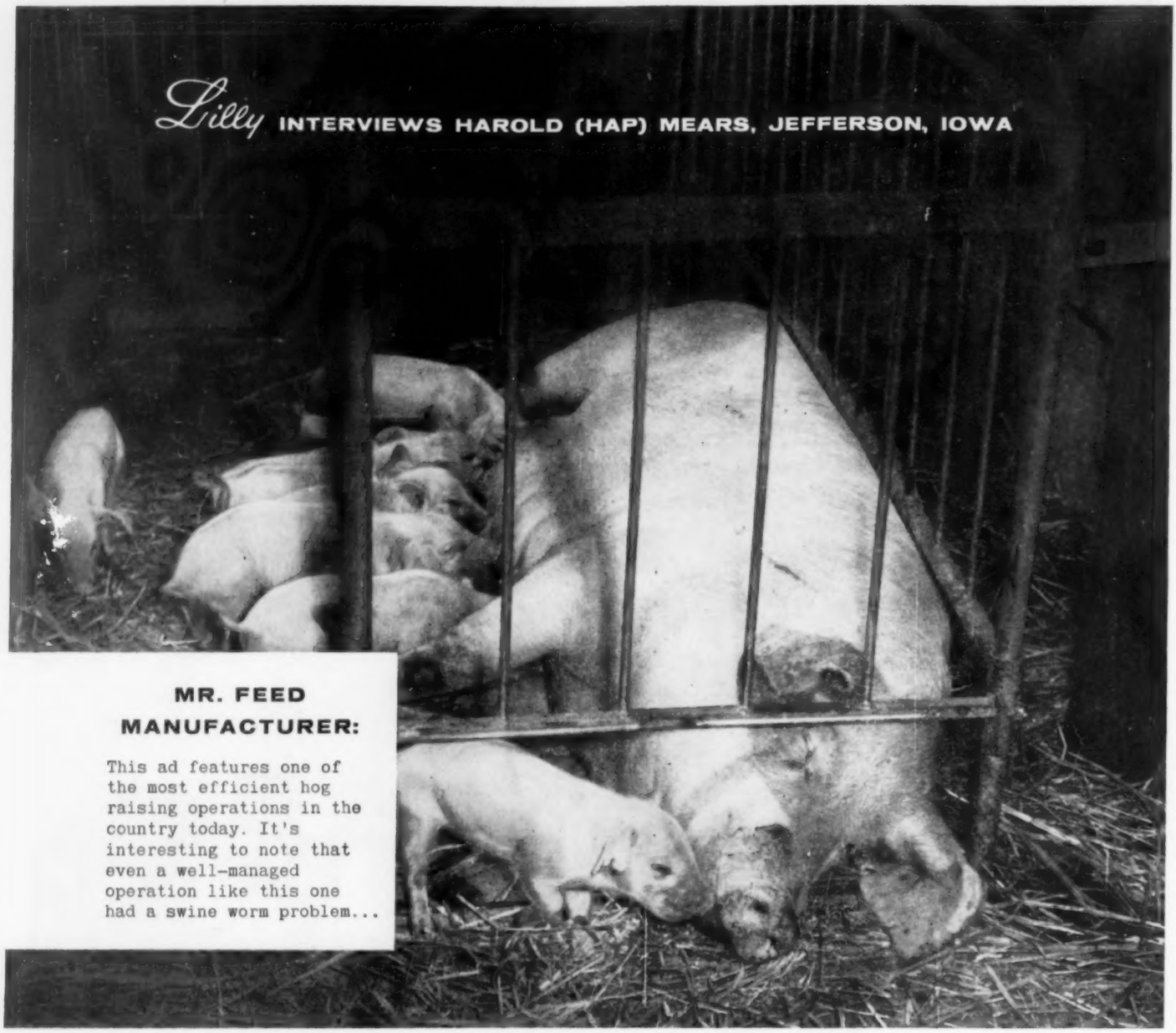

Lilly INTERVIEWS HAROLD (HAP) MEARS, JEFFERSON, IOWA
MR. FEED MANUFACTURER:
This ad features one of the most efficient hog raising operations in the country today. It's interesting to note that even a well-managed operation like this one had a swine worm problem...

"We just don't have a worm problem any more!"

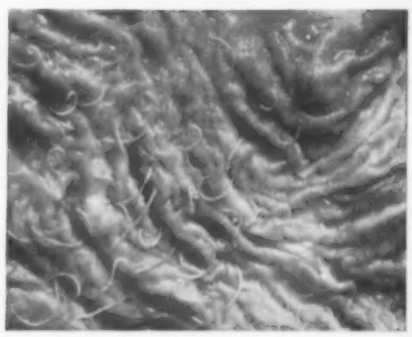
"We've measured Hygromix up one side and down the other. We couldn't be better satisfied...there's no bother, no fuss, no muss."

Harold Mears, a hog raiser since 1941, has one of the most efficient meat-type hog breeding operations in the country today. Litters from 115 Landrace sows are thoroughly measured and recorded. Each litter or pig can be accurately compared with any other on the basis of bloodlines and meat-making ability. Mr. Mears' standards are so high, 98% of his *culls* slaughter out as U. S. No. 1's.

Two pigs from each litter are slaughtered to get further records on carcass grade, length, dressed weight, weight and percentage of lean cuts, and area of loin eye. Sold on grade and yield, they often bring $1.75 to $2.40 above top price on a live-animal basis.

One of the first to test Hygromix, Mr. Mears did a typically thorough job of it. He had this to say about swine worms: "It's worth 10 times as much to kill worms before they mature as it is to remove them after they've done their damage and reinfested the place with eggs. Hygromix does it . . . it's the first *real* control we've ever seen. . . we can't say enough for it."

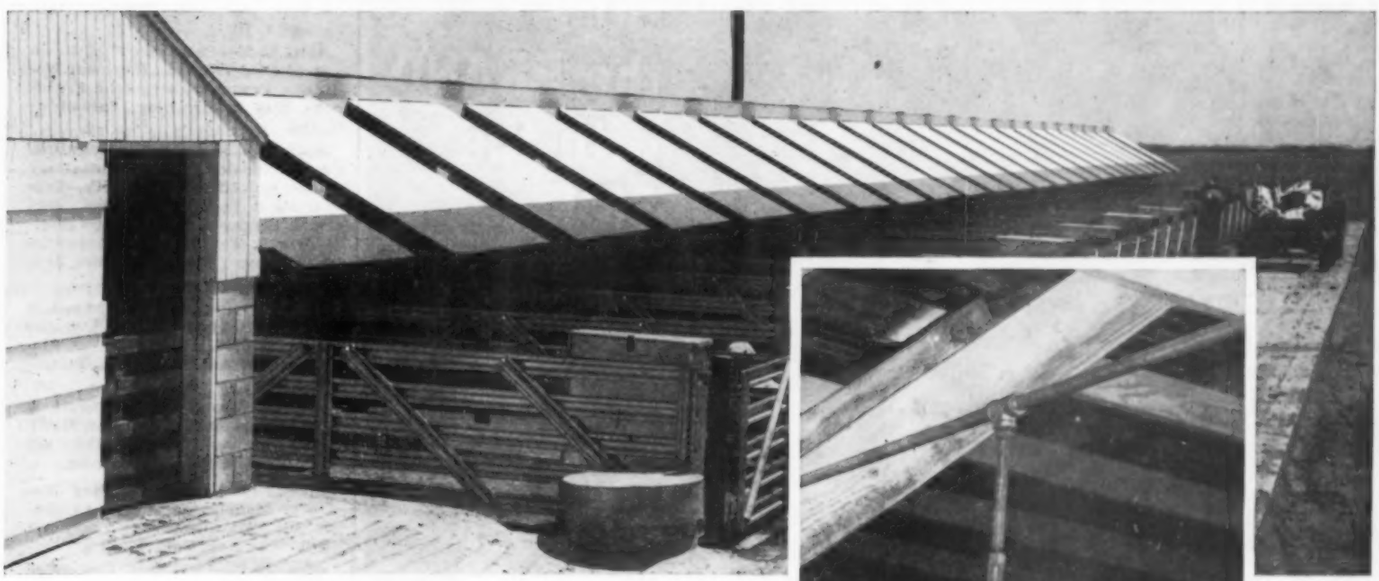
Mears uses Hygromix to control these three damaging swine worms



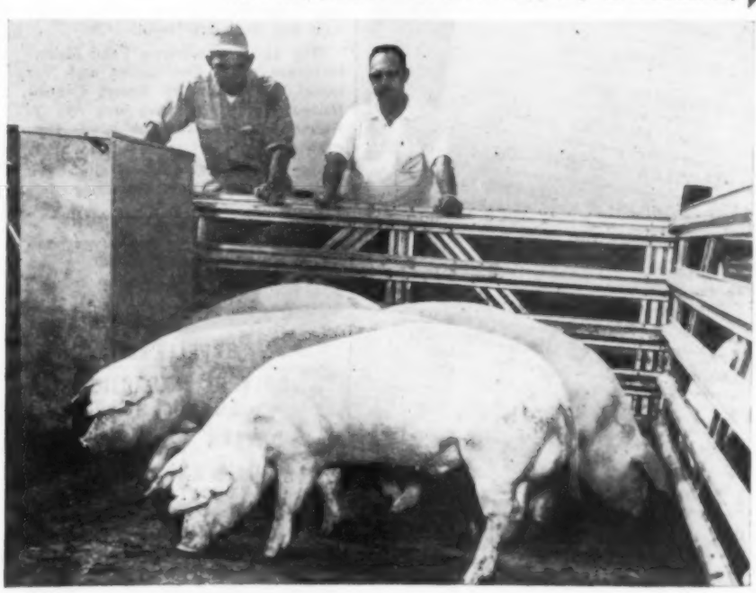
1. Large roundworms can block intestine, disturb digestion, reduce nutrient absorption, and block bile duct. Pigs get thumps, ulcers, damaged livers, lung hemorrhage, become unthrifty.

2. Nodular worms cause damage leading to anemia, emaciation, diarrhea, unthriftiness. Surviving pigs are often stunted. Nodules (shown in photo) are source of much secondary infection.

3. Whipworms can kill young pigs. Worms interlace intestinal wall (see photo), causing inflammation of lining, bleeding, diarrhea. Damaged walls permit bacteria to enter and infect.



When temperature hits 85°, these foggers go on automatically.



This well-planned operation (above) produces 1200 purebred Landrace each year. Fans, heaters and foggers are arranged to give automatic temperature and humidity control. Mears points out that Hygromix in-feed worm control fits his automatic operation because it requires no extra time or labor, no change in feeding or watering methods. Mears has fed Hygromix to more than 2000 head. "We just don't have a worm problem any more!" he notes. "We couldn't be better satisfied."

"Hap" (right) and George Opperman, feed manufacturer's representative, examine a few of Mears' outstanding, meat-type breeding stock. Mr. Mears found he could get 3-day-old pigs on solid feed by sprinkling fresh dirt over pellets for a day or so. Mears keeps his pigs on Hygromix rations from the time he weans them at about 4 weeks, until they weigh 125 pounds. In this way he starts worm control very early. This gives his pigs day-by-day protection during their growing period when worm damage is critical and control pays off best.

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Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

● ● ●

April 13-14 — Nebraska Grain & Feed Dealers Assn.; Paxton Hotel, Omaha; sec., Howard W. Elm, Trust Building, Lincoln, Neb.

April 27-29—American Association of Feed Microscopists; Hotel Lincoln Douglas, Quincy, Ill.; sec., G. M. Barnhart, Missouri Dept. of Agriculture, Jefferson City, Mo.

Nov. 4-7 — National Renderers Assn., Hollywood Beach Hotel, Hollywood Beach, Fla.; sec., Miss Jamie Fox, 30 N. La Salle St., Chicago 2, Illinois.

● ● ●

March 10 — Iowa Cattle Feeders Day; College Armory, Iowa State College, Ames; Dr. Wise Burroughs, Animal Husbandry Dept.

March 12-13 — North Carolina Grain & Feed Dealers Assn.; Sir Walter Hotel, Raleigh; sec., O. W. Faison, North Carolina Department of Agriculture, Raleigh, N.C.

March 15-16—Quad States Grain, Feed & Seed Convention; Sheraton Martin Hotel, Sioux City, Iowa; pres., Don Suttie, Corn Belt Supply Co., Inc., 220 S. Chambers St., Sioux City, Iowa.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.

March 20-21—Broiler Industry Conference; Statler Hotel, Dallas, Texas; sponsored by National Broiler Council; vice pres., Frank Frazier, P.O. Box 368, Richmond, Va.

March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 2-4—Pacific Dairy & Poultry Assn.; Coronado, Cal.; sec., Carl E. Nall, 1304 E. 7th St., Los Angeles.

April 8—Purdue Egg Day; Purdue University, Lafayette, Ind.; sec., David D. Jackson, extension poultryman, Purdue University.

April 12-14—Animal Health Institute, Inc.; Shoreham Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 12-15—National Fisheries Institute; Hotel Commodore, New York City; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 14-15—Poultry and Egg National Board meeting; Edgewater Beach Hotel, Chicago; gen. mgr., Lloyd H. Gell, 8 S. Michigan Ave., Chicago 3, Ill.

April 23-25—California Hay, Grain & Feed Dealers Assn.; Fairmont Hotel, San Francisco; sec., John F. Gilmore, Blue Anchor Bldg., Sacramento, Cal.

April 23-25—Joint Convention, Texas dealer and manufacturer groups; Hotel Texas, Ft. Worth—Texas Grain & Feed Dealers Assn.; sec., Ben M. Ferguson, 614 Meacham Bldg., Ft. Worth; Texas Feed Manufacturers Assn., sec., Ben. E. Schmitt, 3421 Park Ridge Blvd., Ft. Worth.

April 24—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, Department of Animal Science, Purdue University.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

May 8-10—Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 611 Fifth Ave., New York 17, N.Y.

May 10-12 — National Cottonseed Products Assn.; Mark Hopkins and Fairmont Hotels, San Francisco; sec., John F. Moloney, 43 N. Cleveland St., Memphis, Tenn.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jef-

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FIELD REPORT

TO: B.D.

RE: [redacted] Handle Order

Showed Mr. [redacted] our new Side Handle Bag...some of his customers had already mentioned it to him. He saw great benefits for both his dealers and their customers. He immediately recognized that it would be helpful in opening new distribution and getting more merchandising cooperation from dealers. Showed him our strength tests and the heavy abuse our handle could take. Got the order. Left him our Sales Promotion and Dealer Aid kit which he said would be useful to his Sales and Advertising Department. He plans a big promotion built around this sales "extra".

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ferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 1-2—Central Retail Feed Assn.; Hotel Schroeder, Milwaukee; sec., Eldon H. Roesler, 1712 W. St. Paul Ave., Milwaukee, Wis.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 9—Northeastern Poultry Producers Councill Egg Quality and Grading School; University of Massachusetts, Amherst; mgr., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Maurice B. Rowe, Virginia Dept. of Agriculture, 1123 State Office Bldg., Richmond, Va.

June 25-27—Delmarva Chicken Festival, Dover, Del.; Dave Green, 1102 S. State St., Dover, Del.

June 25-27—Canadian Feed Manufacturers Assn.; Bigwin Inn, Lake of Bays, Ontario; N. D. Hogg, Box 66, Station Q, Toronto, Ont.

June 25-27 — Delmarva Chicken Festival; Dover, Delaware; sec., J. Frank Gordy, Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

July 10-14—Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

July 21-23—American Poultry Congress and Exposition; Kiel Auditorium, St. Louis, Mo.; exec. sec., Don M. Turnbull, American Poultry and Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 3-8—Feed Microscopy Short Course; Texas Agricultural Experiment Station, College Station; chm., E. E. Brown, Asst. State Chemist.

Aug. 4-7 — Poultry Science Assn. (meeting for members and executive committee invited guests only), Iowa State College, Ames; chm., Dr. Robert E. Phillips, poultry department, Iowa State College.

August 7-8—North Carolina Feed Manufacturers Assn.; Ocean Forest Hotel, Myrtle Beach, S.C.; sec.-treas., A. M. Upshaw, Jr., North Carolina Feed Manufacturers Assn., Box 44, Mocksville, N.C.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. vice pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.

Sept. 16-18—National Feed Ingredients Assn.; Pick-Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.

Sept. 17-18 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry.

Sept. 18—College-Feed Industry Conference; Iowa State College, Ames; chm., Prof. Emmit Haynes, Animal Husbandry Dept.

Sept. 23-25 — Feed Production School; Continental Hotel, Kansas City; Lloyd Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

Oct. 6-8 — Northeastern Poultry Producers Exposition; Farm Show Building, Harrisburg, Pa.; sec., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 7-9—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 14 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 14-15—Association of American Feed Control Officials; Shorehzm Hotel, Washington, D.C.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington, Ky.

Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 22-23 — Annual Stockholders Meeting, Cooperative G.L.F. Exchange, Inc., Onondago County War Memorial Building, Syracuse, N.Y.

Nov. 12-13—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. F. W. Hill, Poultry Husbandry Dept., Cornell University, Ithaca, N.Y.

CALENDAR FOR 1959-60

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U.S.I. FEED NEWS

Vol. VI ★ A SERIES FOR SCIENTISTS AND EXECUTIVES OF THE FEED MANUFACTURING INDUSTRY ★ No. 3

Penicillin Increases Size, Production and Hatchabilty of Eggs

Tests with hens of several breeds show that penicillin in the ration increases egg production 12 per cent, compared to a ration without penicillin. Hens eat more of the feed containing penicillin, however. Penicillin in the feed also increases egg size slightly, and improves the carotene content of the egg yolks. Penicillin also betters the hatchability of the eggs significantly.

Other tests show feeding penicillin to poultry for their first eight weeks of life produces an increase in weight compared to that of check birds. The progeny of hens fed penicillin for their first 8 weeks show no difference in response to penicillin from that of the offspring of birds not fed penicillin. Egg production and hatchability both improve somewhat for poultry fed penicillin during their first eight weeks of life.

Feeder Cattle Rations Need Extra Phosphorus

A fattening ration for cattle requires at least .25 per cent elemental phosphorus for good bone development and good rumen nutrition, according to recent tests. The phosphorus in the ration must be in a form highly available to the rumen micro-organisms. The tests show that .18 per cent phosphorus in the ration is not adequate for good ruminant digestion and good gains.

Even supplements rich in phosphorus, such as MOREA liquid feed, do best in phosphorus-deficient areas when the feeding program provides additional minerals such as monosodium phosphate. These additional minerals are made available to cattle on a free-choice basis.

Degree of Tenderness in Beef Now Tested by Chemical Means

Provides Measure for a Quality Desired by Consumers

Tests that accurately measure the content of the amino acid, hydroxyproline, in tissue now give meat analysts a measure to correlate with beef tenderness scores developed by other methods. Meat analysts have questioned the importance of connective tissue to tenderness of meat, because they could not show its correlation to tenderness scores by precise data. Hydrolysis of the connective tissue and of the meat now provide hydroxyproline values that correlate with tenderness scores.

Free-choice minerals help cattle to balance their rations for proper nutrition and good growth and production. A mineral box on the end of this MOREA supplement feeder is an important part of a practical MOREA liquid feeding program for ruminants.

Test Beef Muscle

For example, the most tender beef muscle tested showed a hydroxyproline content of .016 per cent, compared to .160 per cent hydroxyproline in the toughest beef tested. The study also indicated that veal contains considerably less hydroxyproline than beef, and that the amount of hydroxyproline in the meat increases in older animals.

Meat from animals fed on a MOREA liquid supplement program is generally tender, according to experience. Work is under way to see if this tenderness is related to the hydroxyproline content of the meat.

Eggshell Quality Helped by Extra Vitamin Intake

A complete high-level vitamin supplement for laying hens on a high-energy ration improves the quality of the eggshells during the warm summer months. Tests, however, show no effects on quality of shell during cooler weather the rest of the year. The high-level of vitamins also shows no effect on shell quality from hens on a low-energy ration.

WORTHWHILE READING

MOREA liquid feed provides a profitable new business opportunity for liquid fertilizer distributors, according to an article in the March issue of "Agricultural Chemicals" magazine by B. A. Frankl of the Mor-Gro Company, Algona, Iowa.

Detailed facts on the better meat quality obtained by cattle feeders using MOREA liquid feed are described in the March issue of "Food Processing" magazine. Look for the article entitled "Add Tenderizing at the Farm Level."

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Further Studies on the Relationship Between Particle Size and Anthelmintic Efficiency of Phenothiazine

● J. R. Douglas, N. F. Baker and W. M. Longhurst, University of California, American Journal of Veterinary Research, Vol. XX, No. 74, January, 1959, pp. 201-205.

ABSTRACT

The purpose of these experiments was to determine the anthelmintic efficacy of phenothiazine of different particle size and to show the relationship between particle size and efficiency. Naturally infected range lambs were placed in a dry corral for approximately one month and fed alfalfa hay. On the basis of several fecal counts, the lambs were allotted to groups so that all lambs within a group had essentially the same average egg count. Administration was mostly by capsule, except in the case of a wet-milled product administered by dose syringe. On the seventh day after treatment all lambs were slaughtered and all worms counted and identified. Mean particle diameter was determined by the air permeability technique using a Fisher sub-sieve sizer for the powder samples, while the wet-milled sample was measured optically.

In the two trials conducted, using a total of 40 lambs divided into four groups in the first experiment, and five groups of 7-9 lambs each in the second experiment, it was found that there was a linear relationship between specific surface area of phenothiazine preparations and their efficiency, within the approximate range of 5,000-25,000 sq. cm. per gm. Practically speaking, this means that an average efficiency value of 98% is secured with 1 micron sized preparations which decreases to an average efficiency value of 63% for 10 micron sized preparations.

However, there are also several other results of the trials which should be pointed out. First of all, the results of the trials at present are only applicable to sheep and it cannot be assumed that they will apply equally well to cattle. Secondly, it was observed that purified phenothiazine had a greater, and unexplained, higher efficiency than N.F. type powder. It was shown, for example, that a purified preparation with a mean particle size of 4.8 microns would be approximately equal to a N.F. powder with a mean particle diameter of 1.9 microns in efficiency.

Furthermore, it was suggested that in areas where Ostertagia (stomach worms), Trichostrongylus (bankrupt worm), and Nematodirus (thread necked strongyle) are the nematodes of greatest importance, N.F. compounds should have a mean particle size of less than 2 microns for best results and an efficiency between 90 and 100%. Such a preparation would have increased bulk over preparations now used and therefore it was also proposed that the same degree of efficiency and over-all results could be secured at no increase in bulk with a purified phenothiazine product of approximately 5 microns in particle diameter.

COMMENT

This is good practical information for sheepmen, feed manufacturers and suppliers alike, and indicates that some specifications should be included on particle diameter of phenothiazine compounds for good results. A common commercial N.F. phenothiazine powder was shown to have an average mean particle size of approximately 12.8 microns in diameter—far too high for good efficiency based on the experiments reported above. Although there have been observations by other workers (Gordon, 1956; and Thomas and Elliott, 1957) that there was an increased efficiency of larger sized phenothiazine preparations vs. smaller sized ones against the nematodes inhabiting the large intestine, such types of compounds would not be very active against

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HEPZIDE does not interfere with

- growth
- sexual development
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Sustained feed consumption. Because HEPZIDE in feeds at recommended levels is palatable, rations are readily consumed by young, growing and mature birds. Thus, birds can receive continuous protection from brooding to marketing.

Through reducing disease incidence and maintaining feed consumption, HEPZIDE helps poults make consistent gains in weight...helps growers finish their birds with profitable feed conversion ratios.

Benefits of preventive program. The most practical and economical approach to the problem of blackhead and hexamitiasis is the *continuous* use of feeds medicated with HEPZIDE. Prophylactic levels of this compound will help check tissue damage and mortality as a result of these diseases, *and your growers market heavier birds at an earlier age.*

Merck & Co., Inc., Chemical Division, Rahway, N. J.

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"Well, one thing's for sure . . . that feed was insufficient!"

those parasites inhabiting the abomasum and small intestines of sheep—usually those most important and troublesome to sheep. It is also important to point out that although the larger sized particles did give better results in the abomasum than in the small intestine, still better results were secured with small particle diameters in both regions. Although reducing the particle diameters of commercial preparations would undoubtedly increase basic costs, improved efficiency and results would justify such an expense.

●

Timely and Worth Noting

PIGS CAN TOLERATE ZINC IN THEIR RATIONS; D. E. Becker, Illinois Research, Winter, 1959, page 16.

With the addition of some source of zinc to commercial feeds to help prevent or cure the parakeratosis condition in swine, it is also necessary to know whether the amounts which are commonly used are toxic or will cause any trouble.

The University of Illinois recently completed experiments with 92 weanling pigs to explore the zinc tolerance of swine as well as the symptoms of zinc poisoning. Different levels of zinc, ranging up to 8,000 p.p.m. in the diet were fed for six weeks in the form of zinc carbonate in corn-soybean meal types of rations.

The common recommendation is to add from 25 to 50 parts per million of zinc to growing-finishing rations for hogs, and it was found that these pigs could tolerate levels of zinc as high as 1,000 p.p.m. Higher levels produced symptoms of zinc poisoning, such as lowered daily gain, greater feed requirements per pound of gain, arthritis, hemorrhage in the front flanks, gastritis, enteritis, congestion of the internal organs, and hemorrhages of the brain, lymph nodes, and spleen. Although many of the animals fed the high levels died within three weeks, no effect was observed on blood hemoglobin levels.

It is therefore obvious that commercial feed manufacturers have no cause to worry about additions of zinc to the diet for the control of parakeratosis, since swine are well able to withstand at least 20 times as much zinc as they ordinarily add to the ration.

Carl E. Schauble

NEW ASSIGNMENT—Carl E. Schauble, field representative for E. I. du Pont de Nemours & Co., nitrogen products division, has been assigned to southern Virginia and the Carolinas, the company announced. Mr. Schauble will headquarter in Charlotte, N.C. He is a graduate of the University of Illinois, with a bachelor's degree in ag science, and Purdue University, with a master's in agronomy. He replaces Gene Baenen, who has been assigned to the industrial chemicals section of the company's polychemicals department.

Arkansas Feed Men 'Cash In' on Poultry

RUSSELLVILLE, ARK. — Feed dealers over an 11-county area here are cashing in on the poultry business. A survey shows that 32 feed dealers have 28 million broilers on feed annually, 23 dealers are feeding about 339,000 turkeys, 15 dealers are feeding 184,000 commercial laying hens and 15 dealers are feeding about 231,000 breeding hens.

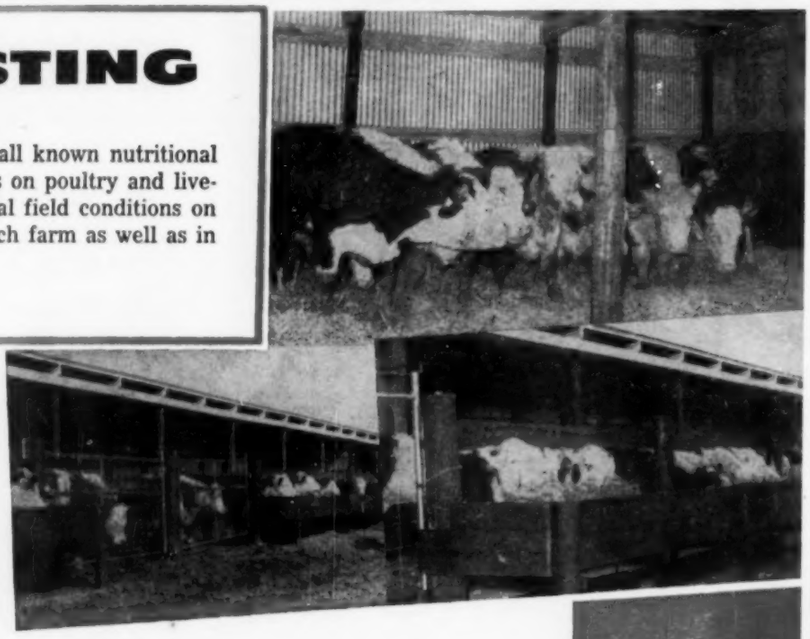
These facts came to light after tabulation of the survey by the Arkansas River Valley Feed Dealers Assn. They were announced by S. D. Mitchell of the Arkansas Valley Feed Mills, Dardanelle.

Sixty-five companies operating 81 businesses in the poultry industry include 41 retail feed businesses, seven processors, one food manufacturer, two by-product users, one breeder, 14 hatcheries, 14 mills and blenders and one wholesale feed business.

The 11-county area covered in the survey includes Sebastian, Van Buren, Logan, Franklin, Johnson, Crawford, Pope, Perry, Faulkner, Conway and Yell Counties.

TESTING

combinations of all known nutritional and other factors on poultry and livestock under actual field conditions on 1600 acre research farm as well as in the laboratory.



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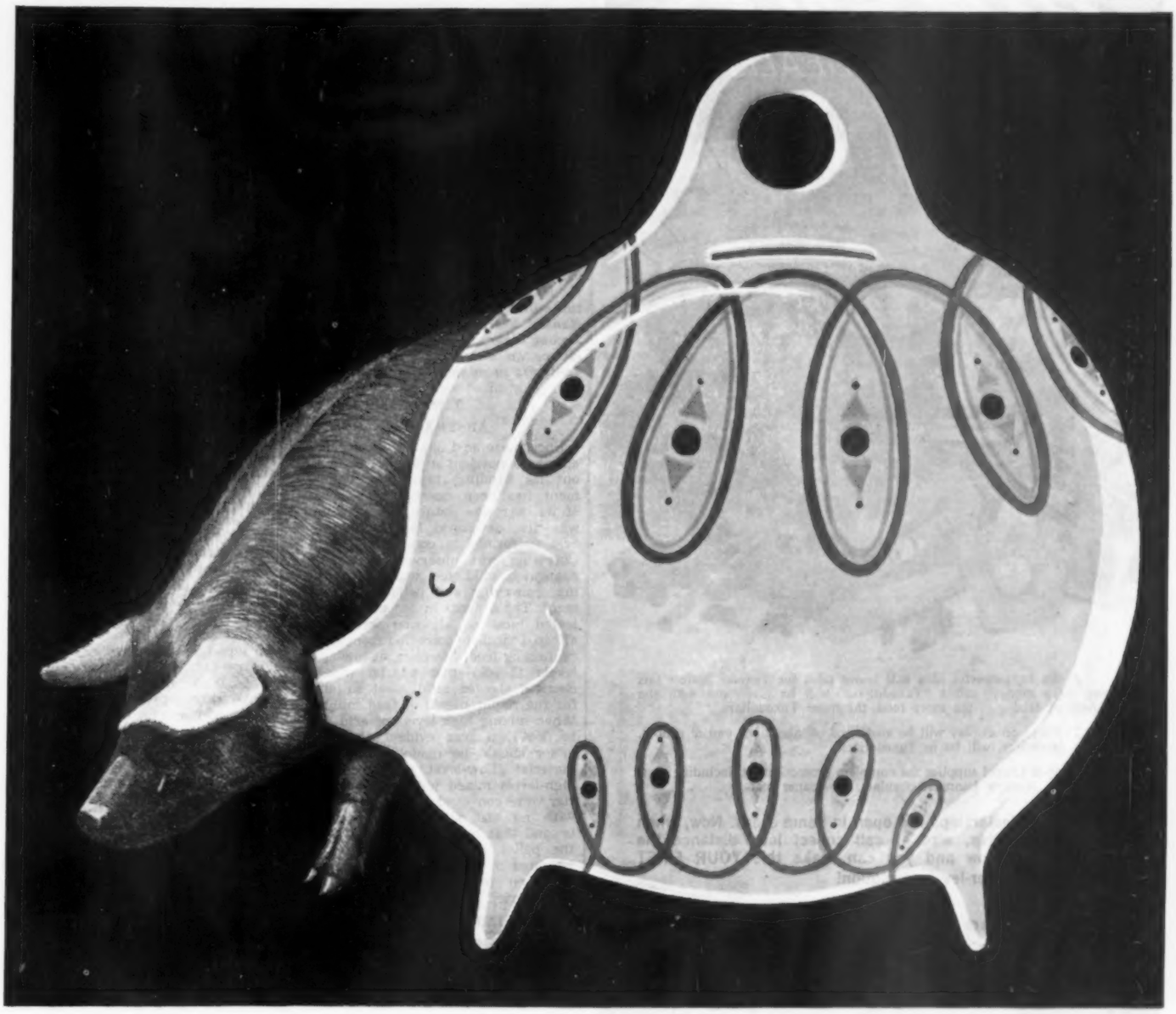

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Handling Phosphoric Acid in Formula Feed

By Dr. W. H. Hastings

Department of Flour and Feed Milling Industries
Kansas State College

EDITOR'S NOTE: Research on feed technology has been conducted for some time by the department of flour and feed milling industries at Kansas State College, Manhattan, and it is hoped that the research can be expanded in the years ahead. The pilot feed mill at the college is being used for research as well as instruction in feed technology. The accompanying article is a report by Dr. W. H. Hastings, associate professor in the milling department, on a recent Kansas State research project. Among other studies being conducted is one on distribution of micro-ingredients in mixing.

ABSTRACT

Phosphoric acid has proved acceptable as a nutrient in animal rations, but its handling in milling equipment has been questioned because of its corrosive nature. A technique was first developed for distributing acid uniformly in commercial feed. Corrosion was observed as weight changes in mild steel secured to mixing, conveying and pelleting equipment. Those areas in the mixer subjected most to abrasion were also affected most by corrosion from acid-containing feed; however, at low-acid levels (1½%) test strip weight changes showed mild steel suitable for the requirements of feed milling. When mixing high-levels of acid (up to 35%), it was evident that the mixer should be made of resistant material. Low-level acid feeds or high-levels mixed with suitable carrier were conveyed to the pellet mill with no test strip weight change beyond that normal for abrasion. In the pellet mill, corrosion was aggravated by acid added to feeds unless first premixed with limestone and carrier material.

INTRODUCTION

The nutrients in a ton of feed listed in descending order of market value are: Protein, Calories, Phosphorus. . . . The fourth might be vitamin A. It is estimated (2) that about 1.8% of all formula feeds are inorganic phosphorus additives. This makes phosphorus the most expensive mineral element in feeds with a cost of added ingredient between $1 and $2 per ton of feed.

Defluorinated domestic rock phosphates, bone meal, colloidal phosphates, manufactured dicalcium phosphates and imported low-fluorine rock phosphates are used in large amounts to furnish the essential nutrient. Dry phosphates are commonly supplied in 50 or 100 lb. bags with attendant problems of container disposal and material loss from breakage and incomplete emptying. Granular phosphorus products, low in dust, are successfully handled in bulk.

Liquid phosphorus products as used by the soft drink industry have been proposed for feeds. The economics of the various phosphorus supplements per unit of nutrient and handling costs have been covered by Maddy (3). Comparative nutritive value and palatability studies have been made for poultry by Titus (6) and for livestock by Menzies (5). The effect of phosphorus supplements on nutrients in feeds under adverse storage conditions has been studied by the Wisconsin Alumni Assn. (4). All these reports indicate that liquid phosphorus supplements are acceptable as ingredients in formula feeds. However, their handling in milling equipment has been questioned because of its corrosive nature. This matter has been investigated in the pilot feed plant of Kansas Agricultural Experiment Station over the past three years.

Liquid additives to dry feeds and even liquid feeds are not new to the industry (1). Cane molasses with a pH of 5.0 containing lactic acid, fish solubles with a pH of 4.5 containing sulfuric acid, and inedible animal and vegetable fats containing free fatty acids, are in contact with a great deal of mixing and conveying equipment in certain feed mills. It has not been found necessary to replace equipment or specify stainless steel when using liquid containing weak organic acids or low concentrations of mineral acids buffered by proteins or their hydrolysates.

Phosphoric acid, however, is corrosive to mild steel, copper, brass and bronze and sufficiently hazardous to require precaution in handling. Commercial products contain 75% to 85% orthophosphoric acid. Material used in this study contained 23.8% phosphoric and had a density of 13.3 lb. per gallon. Under the experimental conditions reported, 1,400 lb. of acid were added to feeds at an average level of 1¼%, with 90% of the feed prepared in pelleted and crumblized form.

EQUIPMENT

Stainless steel holding and dispensing equipment was installed to supply acid to a batch horizontal mixer. Figure 1 shows a schematic

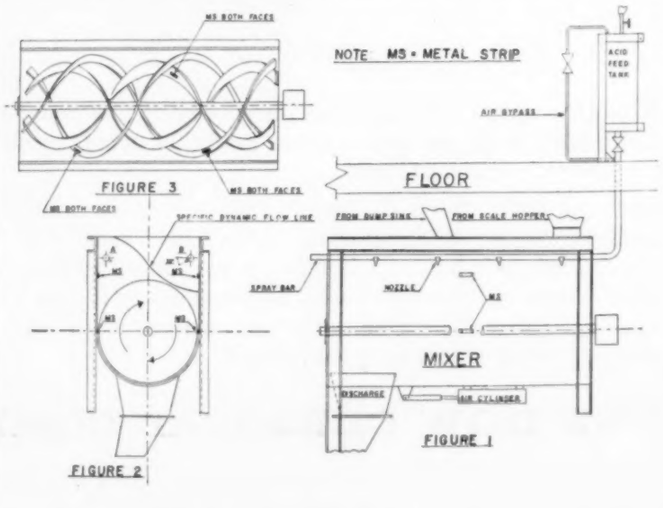

FIGURE 1

FIGURE 3

FIGURE 2

TABLE 1. 20% Laying Mash Concentrate Mixed With and Without Phosphoric Acid

Ingredient	Basal ration	With acid
Yellow corn meal	400	400
Ground grain sorghums	300	300
Wheat standard middlings	450	450
Ground oats	50	50
Soybean oil meal	400	400
Dehydrated alfalfa meal	200	200
Meat scraps	100	100
Salt	20	20
Limestone	30	60
Bone meal	40	0
Phosphoric acid	0	25
Vitamin premix	10	10
Total	2000	2005

drawing of the reservoir with connections to the mixer. Air pressure superimposed on the liquid in the acid feed tank was necessary to maintain a spraying action during acid addition. An air by-pass line below the tank permitted pressure to spray nozzles when liquid was not being dispensed. A header, to which was attached four spray nozzles, carried acid into the mixer either at position "A" or "B" seen in Figure 2. Position "A" was above the agitators on the "up" side of feed movement and, in effect, feed was thrown against the header in this position. At position "B," directly across the mixer from position "A," the header was about 10 in. above the feed flow during mixing, because gravity and centrifugal movement of the spirals folded material into mixer trough below this position.

Phosphoric acid was brought to the plant warehouse in lacquer-lined 55 gal. steel drums and transferred by air pressure and plastic tubing to 5 gal. carboys to be conveyed into the mill. Coveralls and goggles were used by acid handlers at all times. A shower stall was within 40 ft. of the liquid acid for emergency use. The mixer was 15 cu. ft. in capacity, 5 ft. long by 24 in. wide with double ribbon agitator, a 10 in. outlet, and operating at 69 r.p.m. with a 5 h.p. motor. After discharge by air cylinder operated gate, mixed feed was spouted to an elevator boot and taken 49 ft. to a sifter and from this by jack-leg elevator and screw conveyor to a bin over the pellet mill.

The question of dimensional change in milling equipment was studied by securing coded mild steel strips to the mixer sides, outer and inner spirals (Figure 3), elevator cups, spouting and pellet mill conditioner chamber, side plate and paddles. The test strips measured ½x3x1/16 in. and, minus holes for bolting to equipment, the surface area exposed to abrasion or corrosion was 1.8825 sq. in. Plastic insulation strips and washers were used to prevent contact of strips with metal equipment.

EXPERIMENTAL PROCEDURE AND RESULTS

Distribution of Acid in Feed: The basal ration used was formulated to be fed with equal parts of grains to provide a balance of known nutrients for egg production. Supplemental calcium was to be available in the laying house as grit. Acid was calculated into the formula on a phosphorus equivalent basis replacing a bone meal product containing 14% phosphorus, specified in the basal ration. When the substitution of acid for bone meal was made, the calcium accompanying phosphorus in bone meal was supplied as limestone, supplementing that already in the formula. The basal ration and changes with the substitution of acid for bone meal are shown in Table 1.

When the acid feed tank was charged with the calculated amount

TABLE 2. Test Strip Weight Changes and Calculated Rate of Corrosion

Position of strip	Treatment	Time hours	Wt. change grams	Rate mils/yr.
Mixer "up" side, shaft level	Basal	38.2	—0.0083	8
	Low-level acid	11	—0.0146	48
	Basal (ff acid)	13	—0.0071	20
	High-level acid	4	—0.0266	160
Mixer "up" side, top spiral level	Basal	38.2	—0	0
	Low-level acid	11	—0.0121	40
	Basal (ff acid)	13	—0.0022	6.1
	High level acid	4	—0.0270	24.3
Mixer "down" side, shaft level	Basal	38.2	—0.009	1
	Low-level acid	11	—0.0241	79
	Basal (ff acid)	13	—0.0184	51
	High-level acid	4	—0.0093	84
Mixer "down" side, top spiral level	Basal	38.2	—0.0001	0
	Low-level acid	11	—0.0041	13
	Basal (ff acid)	13	—0.0013	3.6
	High-level acid	4	—0.0031	28
Outer spiral lead side, discharge end of mixer	Basal	38.2	—0.0179	17
	Low-level acid	11	—0.0159	52
	High-level acid	4	—0.0077	69
Outer spiral trail side, discharge end of mixer	Basal	38.2	—0.0016	1.5
	Low-level acid	9.5	—0.0028	11
	High-level acid	4	—0.0144	130
Outer spiral lead side, opp. discharge end	Basal	38.2	—0.0111	10.5
	Low-level acid	11	—0.0264	86
	High-level acid	4	—0.0167	150
Outer spiral trail side, opp. discharge end	Basal	38.2	—0	0
	Low-level acid	11	—0.0034	12
	High-level acid	4	—0.0146	132
Reverse spiral lead side, center of mixer	Basal	38.2	—0	0
	Low-level acid	11	—0.0092	30
	High-level acid	4	—0.0019	18
Reverse spiral trail side, center of mixer	Basal	38.2	—0	0
	Low-level acid	11	—0.0036	11.5
	High-level acid	4	—0.0003	3
Mixer discharge spout	Basal	10	—0.0015	5.4
Elevator discharge spout	Basal	5	—0.0017	12
	Low-level acid	6	—0.0022	13
Elevator cup	Basal	9.4	—0.0049	19
	Low-level acid	5.0	—0.0018	13
Pellet mill conditioner side plate	Basal	26	—0.2596	361
	Low-level acid	5	—0.1078	776
	Dry acid premix	4	—0.0280	280
Pellet mill conditioner lead side mixer paddle	Basal	31	—0.0808	94
	Low-level acid	4	—0.0258	233
	Dry acid premix	8	—0.0160	72
Pellet mill conditioner trail side mixer paddle	Basal	31	—0.1586	185
	Low-level acid	4	—0.0336	302
	Dry acid premix	8	—0.0440	198

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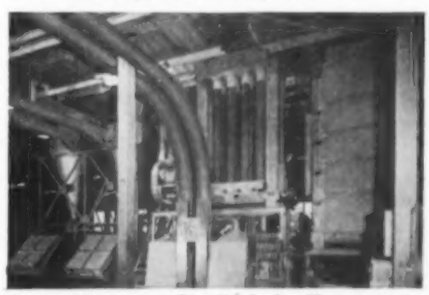

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TABLE 3. Formulas for Dry Acid Premix and Calculated Total Weight After Eight Weeks' Storage

Batch No.	Limestone		Soybean oil meal		75% Acid		85% Acid		Mixing weight	Final weight
	%	lb.	%	lb.	%	lb.	%	lb.	lb.	lb.
1	18.7	62.4	60.0	200	21.3	71	..	..	333.4	315.6
2	17.8	62.4	57.1	200	25.0	87.6	..	..	350	334
3	16.6	62.4	53.4	200	30.0	112.6	..	..	375	353.5
4	16.4	84.0	49.6	270	..	..	35	190	544	515

of acid for a mix, it was put under air pressure and released into the bulk of the feed during the action of mixing and immediately after discharge of material from the scale hopper. A drop of pressure on the head pressure gauge indicated that all the acid had been ejected. The vitamins and small ingredients not binned above the scale hopper were then added, and a mixing time of six minutes followed.

The first problem, and one requiring continuous attention, was to obtain a uniform blending of liquid and dry feed. It was soon apparent that with the dispensing header located in position "A," no adjustment of nozzle position or air pressure could prevent an increase in amount of material retained on a Tyler No. 9 screen. The "overs" of this screen contained fine feed material agglomerated with liquid acid into soft balls. In this position, excessive clogging of spray nozzles was also observed. Apparently the throwing action of the agitators carried material over the header and nozzles, preventing a spraying action. After acid was dispensed, the wetted nozzles became encrusted with dust and feed material, resisting air pressure available to free them.

The acid header at position "B" was therefore studied. Variations in direction of nozzles and amount of air pressure were analyzed by measuring the uniformity of particles retained on Tyler screens as compared with the basal ration. At all nozzle directions and air pressures, some balling of acid and feed occurred when flat, wide angle, low impact velocity sprays were used. Nozzles did not clog, however, in this position. Full-jet cone type sprays gave no improvement. Flat, atomizing nozzles of the type TT-8002 (Spraying Systems Co.) made from stainless steel with 50 mesh monel strainer were tried, and improvement was noted at once. After it was determined that least balling occurred when the nozzle angle from header to horizontal was 30°, all subsequent work was done with these conditions of optimum uniformity of acid distribution.

In position "B," with spray nozzles directed at 4 o'clock and acid meeting rapidly moving feed, little change in sieve size of mixed material was noted. High concentrations of acid and fine feed material were observed in the overs of the No. 24 sieve which is similar in size to the bulk of soybean oil meal used. These were grayish, flattened particles, which were strongly acid to the taste. The pH of these particles was 2.0 to 2.2. These observations showed that acid agglomeration with feed by adhesion was confined to small particles tied up with organic and mineral ingredient dust.

Test Strip Weight Change: Rate of weight change in test metal strips was calculated from the formula: 533 X weight loss in grams X 1000, divided by test strip density (gm./c.c.) X area in sq. in. X hours exposed equals mils per year. Evaluation of rates into categories may be shown by the following guide:

Class A. 0-5 mils per year corrosion rate; materials suitable for critical parts where only slight dimensional change can be tolerated.

Class B. 5-50 mils per year; materials in common use for noncritical parts where some corrosion can be tolerated.

Class C. Over 50 mils per year; provided the products of corrosion are not detrimental to the final product and the corrosion rate is not excessively above the 50 mils per year rate, the metal should be satisfactory.

All weight changes were considered "weight loss" from the action of basal ration and "corrosion" from the action of acid-containing rations. Corrosion loss was not corrected for abrasion loss as is sometimes done to measure the additional effects of corrosion as separate from abrasion.

New test strips attached to the mixer sides showed no weight change except, as shown in Table 2, opposite the shaft on the "up" side of feed movement. Here mild weight loss occurred, well within the range of Class B materials. Low-level acid addition continued for 11 hours (actually 110 500-lb. mixes with a six-minute cycle per mix) showed some corrosion at all positions, not, however, significantly out of Class B category.

TABLE 4. Completeness of Reaction Immediately After Mixing Dry Acid Premix and After Storage

Batch No.	10 min.	25 hr.	48 hr.	8 weeks
	%	%	%	%
1	41.9	42.1	46.0	66
2	40.6	51.9	47.1	59
3	41.0	66.4	58.3	80
4	..	65.4	54.7	80

Following the use of acid, a period of mixing with basal ration showed weight loss at all positions. Examination of test strips showed varying amounts of pitting from previous acid content, probably accounting for much of the weight change under conditions of abrasion from basal ration mixing. The softened metal was not removed by the mild detergent wash and drying process preparatory to weighing. Hereafter, all strips subjected to acid mixing were buffed on a wire wheel before put back into use. Test strips subjected to basal ration mixing before buffing was adopted are designated in Table 2 as "Basal (ff acid)."

Test strips secured to the lead side of ribbon agitators showed mild weight loss with basal ration mixing. Strips on the trail side of agitators remained practically unchanged. Under conditions of low-level acid addition, lead side strips showed a calculated rate of corrosion not much above 30, which is suitable for this type of application. The trail sides of agitators subjected to acid mixing showed more weight loss than under basal ration mixing condition. After the feed left the mixer, there was no place in the conveying equipment where corrosion was noticable above normal abrasion weight loss until the feed reached the pellet mill. Here in the conditioner chamber, where steam is introduced as an aid in pelleting, excessive corrosion was noted with basal ration operations. Under encrusted feed on the side walls, large rust flakes were stripped off to make a level setting for test strips. The lead side of mixing paddles which forced the soft feed to the outlet were shiny where not caked with feed. It was noted that caked feed on paddles was drier than that on the conditioner sides.

Dry Acid Premix: Small batches of acid, limestone and soybean oil

(Turn to FORMULA FEED, page 62)

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Bulk—Part 2

Feeder Demand Sets Pace for Bulk Trend

By Al P. Nelson
Feedstuffs Special Writer

In certain sections of the country, particularly in the hog and cattle areas of the Midwest and the layer and broiler areas of the East, feed mill owners and feed dealers have gone into bulk delivery because demand by medium and large scale feeders has made it necessary.

In others, principally some dairy and more diversified agricultural counties, some dealers have put in bulk without specific demands, and then have conducted demonstrations and advertising campaigns to promote bulk delivery of feeds.

It is quite obvious that the feed man in an area of big specialized feeders must make a sizeable investment in bulk facilities to get extra business. The operator who sees the trend, but has no pressing demand for a change, however, may move a little more slowly. He may, perhaps, convert a grain truck to bulk delivery to "see how it goes."

This difference in customer demand is certainly a big reason why one operator is willing to spend $15,000 or more for bulk facilities and why another wants to get by at present with an investment of $2,500 if he can.

Dealer Reactions

An example of the feed man who sees little need as yet for making the change was a man who told me, "There isn't much bulk delivery in this area yet. Farmers take some feed in bulk, of course, by picking it up in their own trucks and scooping it out at home, but I can't see where we can make enough profit delivering in bulk. When the time comes, we'll do it, but not now. We're just a little behind on this bulk situation compared with, say, Illinois, Iowa or Ohio."

In contrast, a New York feed company, rated as an independent with a number of retail stores, delivers feed in bulk to farmers direct from the main mill and also has complete feed storage tanks at branch stores where farmers can come and get it on practically a self-serve basis, if they wish.

"Our operation as it is today could not exist without the bulk feed arrangement," said an executive of the firm. "With our two big bulk delivery trucks we can deliver any feed needed in either our branch store service tanks or direct to farmers."

Thus, it would seem that in many areas, the dealer who has bulk delivery, or the dealer contemplating installing bulk equipment, needs to make a thorough survey of his trade area—if he has not already done so—to see how standard bulk feed handling equipment and practices are going to satisfy his present customers and win new ones. The amount of investment each dealer makes in bulk equipment will ultimately rest on such a survey.

Charges

Charges for bulk feed delivery two years ago, feed men said, were quite varied. A few dealers with bulk equipment advertised that they would give $5 ton discount on feed ordered in bulk. In the region I traveled—12 states—I found that in 85% of the places visited $3 is now the standard discount from the bag price. A plant pickup discount of $1 seems to be a popular one, too, in most areas.

If the bulk feed arrangement calls for mill pickup of a farmer's grain, much depends on whether it's a short or long haul. I found minimum pickup charges were $2.50 per load in some areas, while $3.50 was a minimum in others. Some dealers grumbled that competitors would pick up farm grain at no cost to the farmer if the dealer got the farmer's grind and mix business, plus bulk delivery, but such instances were rare.

Grain Bank

The grain bank plan seems to fit well into the bulk feed delivery arrangement a mill in a grain area makes with farmers. Because each farmer has spare time at certain seasons of the year, he can utilize this to haul grain to the mill for grain bank storage. Thus, he actually saves mill hauling charges. If he can haul enough grain into storage to last his feed schedule for many weeks, he can then view his own grain hauling efforts during otherwise idle periods as a profit making procedure.

A large scale feeder who raises much of his own grain can easily arrange to haul it into storage without weather or road trouble which could be encountered if he attempted to

EDITOR'S NOTE: This is the second article in a series of three by Mr. Nelson on the development of bulk feed handling in a broad area of central, eastern and mid-south states. The series is based on some extensive field trips made by the author. Feed dealers and mill operators in several states were interviewed by Mr. Nelson in his preparation of this report on bulk and other reports on feed business operations.

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- ☐ assuming that phosphates of inferior quality are satisfactory under "practical" conditions

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haul grain regularly on a per-grind order basis.

Since many custom mills are without adequate grain storage space, compared to country type elevators, one finds many custom mills setting up metal grain bin storage facilities on their premises to facilitate the trend toward grain bank operations. A large number of custom mill operators charge storage rates and shrinkage rates for such grain.

Costs

Because a large number of feed mills have gone into bulk delivery quite rapidly and have been busy handling an increased volume of business, it is true that many owners have not yet obtained accurate bulk feed delivery costs. There are exceptions, of course, but for the most part, mill owners have not yet broken down bulk delivery costs to a per-mile basis. It would appear that a full bulk truck going to a farm must be doing so at a low per-mile cost. But the time taken for bulk deliveries varies from farm to farm due to tonnage, accessibility, barn-lot delivery problems and the like.

There is a big difference in per-mile delivery cost of a six-ton load of feed to one customer with a well-paved feedlot approach and three-ton load to three different farmers who are widely separated and with varying barn and feedlot conditions. However, many mill operators are realizing this factor and are giving some attention to the cost angle.

The general feeling about the matter of delivery is that if bulk feed enables the farmer to cut costs and make more profit, he can afford to pay at least a mill's break-even cost on delivery as well as grain pickup, and that perhaps some day the dealer can even make an investment profit on such service.

One country wit said about the modern farmer: "The feed dealer is doing half the farmers work nowadays and not getting any more money for it. The next step is to be on hand to light the farmer's pipe, free of charge."

The time is coming when the alert feed mill owner should carefully scrutinize his service cost to see if it is breaking even. Educational campaigns by mill operators, trying to secure more farmer cooperation in making quicker and better deliveries possible and, also, educational campaigns aimed at bulk feed truck drivers to lessen depreciation, unnecessary wear and repairs are going to pay off in greater savings and, perhaps, profits. The human factor in delivery of bulk feeds and its relation to profit and loss are often overlooked.

The spread of bulk feed delivery has resulted in an increased demand for self feeders and also storage bins, wooden and metal, on the feeding scene.

The fact that the purchase or the building of feed storage bins of large size on the farm is usually necessary has been a sales obstacle thus far to growth in bulk feeding practices. The average farmer, cautious because of the vicissitudes of his kind of life, "looks twice and thinks three times" when he realizes he needs to spend $200 to $500 or more for either a self feeder or a feed storage bin, or both. To by-pass such an investment, he often decides to keep on buying feed by the bag and working harder to handle his feed.

How are bulk feed firms meeting this sales obstacle?

Several feed firms that also sell building materials offer to build wooden storage bins for farmers out of used or new lumber. Such firms sometimes will also build self feeders. The farmer who has a bin built of used lumber which he has on hand, and who contributes some labor to an expert lumber crew, can get a storage bin for $50 or $100. If he uses all new lumber and gives no help on construction he'll pay more.

Feed firms with bin building crews are few in number, of course, but they are found. Conversion of old hay feeding chutes and the like into feed storage bins is done frequently. The feed dealer who hopes to sell the average farmer on bulk feed delivery will do well, dealers tell me, to survey barns and other buildings where feeding is done for possibilities to convert into bin space.

In fact, the selling of economical feed storage space, as well as the sale of self feeders of one type or another, is often the first step a dealer can take to insure the sale of more bulk feeds. Too many dealers sell just the bulk service economies without devoting enough attention to helping the farmer solve his feed storage and feeder expense problem, my visits showed.

Very few of the dealers visited also took advantage of the profit-making opportunities of selling wooden and metal bins, as well as self feeders. They appeared to leave such matters to the lumber yard and other farm supply stores who are only too anxious to get this business.

Dealers generally, however, are alert to the matter of financing the purchase or building of a storage bin or feeder when done through their firms. Many of them will sell a farmer bulk feed for feeders or storage without a down payment. Then they will charge the farmer the bag price of the delivered feed instead of the bulk price until the bin is paid for. This is a widely accepted practice. Obviously, the alert farmer who buys bulk feed in considerable quantity is going to realize that perhaps he can make an additional profit by financing his own bins or feeders and get the advantage of the bulk feed price immediately. But most farmers are not ready as yet to handle this investment angle, except the large specialized feeders.

The next article will deal with individual applications of bulk feed marketing practices.

FIRE DESTROYS ELEVATOR

LISMORE, MINN. — Fire swept the Farmers Union Elevator here recently. The building, containing between 30,000 and 35,000 bu. of grain, was destroyed.

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Source	Type of Feed	Supplementation in International Units of Vitamin E per ton
Dr. Myron W. Pasvogel Dept. of Poultry Science University of Arizona, Tucson, Arizona	Chicken Layer (With BHT)	5,000
	Chicken Breeder (With BHT)	5,000
Dr. E. P. Singsen Dept. of Poultry Science University of Connecticut Storrs, Connecticut	Chick Starter and Broiler (Without BHT*—Total α-tocopherol 14,000 to 22,000 units per ton)	4,000 to 8,000
	(With BHT*—Total α-tocopherol 14,000 to 22,000 units per ton)	Zero to 8,000
	Turkey Breeder (All-mash)	20,000 to 30,000
Dr. Milton L. Scott Dept. of Poultry Husbandry Cornell University Ithaca, New York	Turkey Starter	5,000
	Turkey Grower (All-mash, 24% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 20% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 18% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (All-mash, 16% protein, with BHT and brewers' dried yeast)	5,000
	Turkey Finisher (All-mash, with BHT and brewers' dried yeast)	5,000
	Turkey Grower (With grain, 20% protein,† BHT, and brewers' dried yeast)	10,000
	Turkey Breeder (With grain, 24% protein,† and brewers' dried yeast)	40,000
	Turkey Breeder (All-mash, 18% protein,† with brewers' dried yeast)	30,000
	Duck Breeder (With brewers' dried yeast)	7,000
	Chick Starter†	5,000
	Broiler†	5,000
	Chicken Breeder (All-mash)†	5,000
Dr. T. D. Runnels Dept. of Animal and Poultry Husbandry University of Delaware, Newark, Delaware	Broiler (in batteries)	5,000
Dr. Henry L. Fuller, University of Georgia Poultry Department, Athens, Georgia	Broiler	Zero to 4,000
Dr. Stanley L. Balloun Dept. of Poultry Husbandry Iowa State College Ames, Iowa	Turkey Starter	7,000
	Turkey Grower (All-mash)	5,000
	Turkey Breeder (All-mash)	10,000
	Chicken Breeder (All-mash)	5,000
Elbert J. Day, Mississippi State College Dept. of Poultry Husbandry State College, Mississippi	Turkey Starter	8,000
New England College Conference	Turkey Starter	10,000
	Turkey Grower	10,000
	Turkey Breeder	30,000
Dr. Edward C. Naber Dept. of Poultry Science The Ohio State University Columbus 10, Ohio	Turkey Starter	8,000
	Turkey Grower	8,000
	Turkey Finisher	8,000
	Turkey Breeder	8,000
Dr. S. J. Slinger Ontario Agricultural College Guelph, Ontario, Canada	Turkey Starter and Grower (Without BHT)	6,700
	(With BHT)	5,000
	Turkey Breeder (Without BHT)	10,000
	(With BHT)	6,700
Dr. C. W. Carlson Dept. of Poultry Husbandry South Dakota State College Brookings, South Dakota	Turkey Breeder	10,000
	Chicken Breeder	10,000
	Turkey Starter	4,500
	Chicken Starter	4,500
Dr. J. R. Couch Poultry Science Department Texas A. & M. College College Station, Texas	Chick Starter and Broiler	5,000
	Chicken Breeder	10,000
	Turkey Starter and Grower	5,000 to 8,000
	Turkey Breeder	20,000
	Chicken Layer	2,500
Dr. Leo S. Jensen State College of Washington Dept. of Poultry Science, Pullman, Washington	Turkey Breeder	10,000 to 20,000
		Supplementation in International Units of Vitamin E per mink per day
Dr. John R. Gorham Dept. of Veterinary Pathology State College of Washington Pullman, Washington	Mink adults (Nov. 1-June 1)	5 units
	Mink kittens (June 1-Nov. 1)	10 units
	Mink kittens (treating an outbreak of yellow fat disease)	20 units

*Dr. Singsen's recommendations cover vitamin E from all sources. This allowance may be reduced in the presence of an antioxidant as shown.

†When less than 50 lb./ton of alfalfa are used on all-mash basis, and/or when there is reason to suspect harvest or storage damage to critical ingredients.

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Dr. Salsbury's—The Scientific Approach to Poultry Health Problems

Camera Views of the News

MFMA DIRECTORS MEETING—The directors of the Midwest Feed Manufacturers Assn. are shown at a meeting during the MFMA convention in Kansas City. Members of the board are (clockwise around the table, beginning at the left front):

Harry Dobbyn, Power Feed Mills, Abilene, Texas; Jack Grubb, Naturich Mills, Abilene, Kansas; L. F. Van Stone, Uncle Johnny Mills, Houston; Hugh Kelley, Feed Specialties, Inc., Des Moines, Iowa; G. Robert Peterson, Pillsbury Mills, Clinton, Iowa; Maurice Johnson, Staley Milling Co., Kansas City; Fred Darragh, The Darragh Co., Little Rock, Ark.; Guy Cooper, O. A. Cooper Co., Humboldt, Neb.; Collier Wenderoth, O. K. Feed Mills, Ft. Smith, Ark.; Alfred Owens, Simpson & Co., Colorado Springs, Colo.; Ray Ammon, The Quaker Oats Co., St. Joseph, Mo.; Lloyd Larson, MFMA executive vice president, Kansas City; Jack Blanke, Blair Milling & Elevator Co., Atchison, Kansas; Lloyd Workman, Supersweet Feeds, Minneapolis; Haney Cochran, H. K. Cochran Co., Little Rock; W. L. Alley, Pay Way Feed Mills, Kansas City; Robert Calvert, Evergreen Mills, Ada, Okla.; L. H. Fairchild, Honeggers' & Co., Lincoln, Neb.; David Martin, Martin Milling Co., Malvern, Iowa; Harold Fouts, G. E. Conkey Co., Nebraska City, Neb.; Joseph Miebergen, W. B. Johnston Grain Co., Enid, Okla.; Alton Bowers, Marco Mills, Inc., Joplin, Mo., and Thomas Morrow, Morrow Milling Co., Carthage, Mo.

GROUND BREAKING CEREMONIES—Among the men taking part in the recent ground breaking ceremonies for the new Supersweet Feeds plant at New Hampton, Iowa, were (left to right): Nels Jensen, secretary, New Hampton Development Corp.; Frank Kraft, New Hampton mayor; R. O. Norton, Supersweet Feeds division production manager, Minneapolis; R. W. Johansen, manager of the new plant at New Hampton, and John Kelly, president, New Hampton Development Corp. The finished building will be 112 ft. long, 80 ft. wide and 50 ft. high. A 50-ton scale will be installed adjacent to the plant for weighing incoming and outgoing shipments.

NEW OFFICES—Formal dedication of the new offices of Dannen Mills, Inc., St. Joseph, Mo., took place with an open house recently. Offices formerly in two locations are now combined in the extensively remodeled building at right, which was purchased two years ago. A feature of the new building is the quarters of the Dannen Grain & Jobbing division. Desks of division traders and officers overlook the complete board shown above. The division staff (left to right) includes: C. B. Stephenson, William Jefferson, E. A. Gumbert, Carl Bottorf, Art Frank, C. T. Stover and Randall Sawyer. Missing when the picture was taken was W. J. Sprengel.

TEXAS TRIAL—A feature of the recent American Dehydrators Assn. convention in Houston was a "South of the Border" party. There to provide atmosphere and thrills for the crowd were Harris County deputy sheriffs. Robert Pharo, Keystone Dehydrators, Nazareth, Pa., outgoing president of the ADA, has just been arrested, tried, and is about to find out what a "necktie" party feels like. Behind Mr. Pharo, waiting his turn, is Eric A. Mengering, Farm Bureau Cooperative Assn., Columbus, Ohio. Ralph Beermann (to Mr. Pharo's left), Beermann Bros. Dehy, Dakota City, Neb., new ADA president, finds the proceedings exceedingly funny.

FRANCHISED BY HONEGGERS'—The Mayfield (Ky.) Milling Co., pictured above, will be a franchised manufacturer of Honeggers' "Big H" Feeds and a distributor of Honegger chicks, buildings and equipment. (Feedstuffs, Feb. 21) The franchise agreement was announced recently by E. F. Dickey, president, Honeggers' & Co., Inc., Fairbury, Ill., and Robert L. Butterworth, president of the Kentucky firm. The Mayfield mill will serve Kentucky and Tennessee.

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FORMULA FEED

(Continued from page 52)

meal were prepared in laboratory mixing equipment, but always with considerable increase in particles retained on a No. 9 Tyler screen. After evidence of only mild corrosion in mixing equipment when using low-level acid additions, high-level acid premixes were tried containing an analyzed total phosphorus content of up to 10%. Table 2 shows the corrosion resulting from high-level acid, four batches containing 21% to 35% liquid acid sprayed on limestone and soybean oil meal. Mixing time was extended beyond that necessary to add the acid in order to subject test strips to acid mixtures for a total of four hours and to encourage the chemical reaction of acid and limestone. However, the actual time needed to discharge the acid through the nozzles, recharge the acid feed tank and finish a batch, occupied more than three hours for the four batches.

TABLE 5. Tyler Sieve Analysis and pH 1% Slurry Dry Acid Premix

Batch No.	Over Tyler No. 10		Over Tyler No. 16		Over Tyler No. 20		Through Tyler No. 20	
	%	pH	%	pH	%	pH	%	pH
1	0.26	3.7	12.6	5.0	22.6	5.0	64.8	4.75
2	0.12	3.7	10.7	4.7	19.0	4.7	70.6	4.60
3	0.12	3.6	11.0	4.2	21.6	4.0	68.0	3.80
4	0.5	2.7	6.0	3.4	18.0	3.3	75.6	3.30
Soybean oil meal	0.3	6.0			17.12	6.2	82.7	6.2

The formulas for dry acid premix (Table 3), showed that in batches 3 and 4, acid was well in excess of the ability of limestone present to neutralize it, if proper conditions existed for a chemical reaction to be carried to completion. Completeness of reaction (Table 4), based on measurement of limestone CO_2 unevolved, showed that during mixing and 10 min. afterward, 40% or more of the theoretical reaction had taken place. Calculated final batch weights were based on completeness of reaction at eight weeks. Weight loss of the batch was calculated according to the formula: % $CaCO_3$ in limestone X pounds limestone in batch X % reaction X 44/100. High-acid premixes showed little variation in texture from the soybean oil meal used as a carrier in this study (Table 5).

Pelleting: Pelleting data reported were an average of five separate runs of one ton each of basal ration followed by a ton or more containing liquid acid and two runs containing dry acid premix. Before recording any data, one mixer load of 500 lb. basal ration was pelleted to bring the equipment to normal temperature conditions. Steam to the pellet mill was introduced by a Hancock flow control valve which had been calibrated to relate turns of the wheel to pounds steam per hour. All feeds pelleted were crumblized, and fines returned to the mill for re-pelleting were collected at the sifter by removing the usual spouting and sacking off the "throughs" of the sifter screen as they were produced. Pellet hardness was found by means of a Stokes Hardness Tester, reading in kilograms.

A power panel wired to the pellet mill motor indicated operating voltage, amperes, watts and power factor. In addition, a 4-digit counter recorded disk revolutions of a watt-hour meter. The watt-hour tally was used in all cases to calculate KWHs of energy used per ton of pelleted feed.

Pelleting specifications for basal rations and those containing liquid acid and dry acid premix are shown in Table 6. Pelleting time in minutes per ton included re-pelleting fines returned to the mill during continuous operation. Steam pressure with the flow control valve closed was adjusted by a regulatory valve to 90 lb. (psig) and the drop to pressure noted was due to the opening of the valve into the pellet mill conditioner chamber. The ratchet drive volumetric feeder was set as high as possible without exceeding full load rated current.

DISCUSSION

Specifications for good acid distribution in feeds pointed to the use of flat nozzles which produced an atomizing, single plane type of spray discharging about 10 in. from rapidly moving feed, sufficiently dense to prevent penetration of acid to metal parts of the mixer. Poor acid distribution was associated with an increase in weight of particles retained on a Tyler No. 9 screen. These large particles contained an excess of liquid acid, as indicated by low pH values and caking to the mixing equipment.

With each nozzle spraying 0.17 gal. per minute at 30 psig, the four in

TABLE 6. Production Data When Pelleting Basal, Liquid Acid, Dry Acid Mix Rations

	Basal ration	Liquid acid	Dry acid mix
Lb. mixed and pelleted, tons	5	5.8	2.25
Pelleting time, min./ton	33.2	34.6	33.3
KWH/ton	7.93	9.77	8.86
Steam psig	48	60	48
Steam flow valve	2.8	1.8	2.8
Pellet feeder setting	35	32	35
% fines returned to mill	22	17	**
Pellet hardness	10.0	10.5	9.9
pH soft feed, 1% slurry	6.2	5.6	5.9
% water added as steam	5.2	4.5	5.2

**No data.

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use allowed the total weight of low-level acid addition to be made in less than one minute. Insufficient feed in the mixer at the time of acid addition or direction of liquid acid into "dead" areas or onto equipment, where it was picked up by feed, not only caused corrosion in excess of that found with good distribution, but allowed balling up of acid and feed material. Where the trail side of spirals or low-friction areas of the mixer were wetted with acid, as occurred with poor distribution, subsequent mixing of basal ration caused corrosion in excess of that found where there was no previous history of acid use. This may be due to pitting from acid which softened the metal, causing it to be easily eroded by mild feed friction.

No loss of acid vapor from spray nozzles was noticed, even when the dust collecting system was not in use. Also, with low-level acid addition, no significant weight change was observed between material going into the mixer and that sacked off after mixing and conveying to a sack-off bin. It may have been that acid was absorbed by the bulk of feed material, such as grains and protein concentrates, to be buffered and dried beyond the point of a chemical reaction with limestone evolving CO_2. Undoubtedly, the reaction was slowed by the absence of water, and a delayed, continuous reaction may take place confined to small balls of acid and feed material where limestone was also intimately mixed. This was noted in the high-level acid mixture where a continuing reaction took place, and aggravated by agitation and aeration of the premix material.

It has been described how cleaned metal test strips were secured at various positions in the mixing, conveying and pelleting when feed was manufactured; between tests for weight loss, it was always difficult to locate previous holes in the equipment where strips were bolted. A few places in the equipment remained shiny and cleaned, and these, of course, were subject to most abrasion. The action of taking off and replacing clean strips may have resulted in more weight change than would have been found under usual operating conditions where a build-up of material is allowed on metal surfaces. In fact, data shown may be considered as extreme for conditions used. This would not, however, be true of the pellet mill conditioner chamber where caked feed never dries and a continuous corrosion is taking place, aggravated by the high temperature as well as moisture.

It was difficult to follow a basal ration in the pellet mill with one containing liquid acid and maintain the same mill settings established by the previous run. The first obvious change needed was the reduction of steam intake to prevent choking up of the pellet die. With less steam going into the soft feed, the feeder setting had to be backed off to prevent the wall ammeter from reading beyond a safe amperage for the motor. If the same settings were used, constant attention would be necessary to prevent either a choke up of the die or overheating of the motor. When dry acid premix was used in formulation, no change from the basal ration was made in pellet mill operations and the only indication of the presence of acid was a slight increase in KWHs per ton of feed produced.

The increase in pellet hardness in acid feeds was considered significant. The practical value of this was observed in a reduction of per cent fines brought back to be re-pelleted. The reduced amount of fines developed from pelleted, crumblized acid feeds did not entirely compensate for the lower feeder setting during the pellet operation. Since pellet hardness depends somewhat on moisture content, it is possible that the reduced moisture added to acid feeds resulted in a drier, harder pellet coming from the cooler. On the other hand, liquid, commonly water or steam, is used to bind soft feed material into a hard, compressed form as well as to lubricate the material and increase pelleting rate. The total liquid added, acid and steam, was greater in acid feeds than in the basal ration, which may explain the hardness of acid-containing pellets.

Undoubtedly, the use of a high-level acid premix, dry and free-flowing with completeness of acid-limestone reaction nearly 100%, would enable mixing, conveying and pelleting operations to proceed the same as when using any other dry phosphate compound. A small continuous premixing line using stainless steel equipment could be used to feed phosphoric acid into rations, with adjusted formulas to allow for the composition of the premix.

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ACKNOWLEDGMENTS

This project was sponsored by Westvaco Mineral Products Division of Food Machinery & Chemical Corp., Monsanto Chemical Co., Victor Chemical Co., and Hooker Chemical Co. The author acknowledges with thanks the technical assistance given by the Westvaco Chemical Products Division.

ILLUSTRATIONS

The charts and tabular material in this article appeared originally in a paper by Dr. W. H. Hastings, "Handling Phosphoric Acid in Formula Feeds," which was published in the January, 1959, issue of the Journal of Agricultural and Food Chemistry.

Grain Grading Schools In Nebraska Stated

LINCOLN, NEB.—Grain grading schools have been announced by the Nebraska Grain Improvement Assn. The first will be held March 23-24 at North Platte in the administration building of the North Platte Experiment Station. The second will be March 26-27 at Lincoln in Keim Hall at the University of Nebraska. Purpose of the schools will be to acquaint elevator operators with the procedure in grading and show them how to identify the various types of damage to grains. Corn, wheat and grain sorghums will be included.

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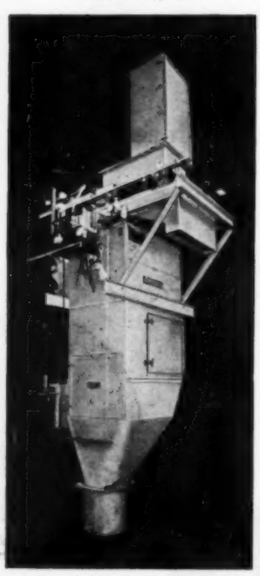

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More Than 550 Persons Attend New Hampshire Poultry Conference

By RICHARD WARREN
University of New Hampshire

DURHAM, N. H.—Poultrymen and field workers got the "full course treatment" at the University of New Hampshire Poultry Health Conference held in Durham recently. Nationally-known authorities from the eastern half of the U.S. brought 550 registrants at the conference the latest findings in the poultry health field.

The conference was attended by service men and poultrymen from all over the Northeast.

All was not harmony, and whether E. acervulina (a species of so-called chronic coccidiosis) is a major problem is not settled yet, nor is the discussion on the pros and cons of coccidiosis vaccination. The final panel, when all the speakers are bombarded with questions, warmed up to the point where it ran through the lunch hour and into the afternoon, with nobody even looking at the clock.

Co-chairmen of the conference were Emory Peacock, Unity Grist Mill, Manchester, and Roger Clement, Manchester, representing the Beacon Milling Co., Cayuga, N.Y.

Dr. Morris S. Cover, University of Delaware, opened the conference with a discussion of "The Differential Diagnosis and Treatments for Infectious Synovitis and Infectious Hepatitis." He said these are two different diseases with little in common. Hepatitis usually affects birds 10 weeks and older. It causes cull birds, decreased egg production and poor interior egg quality, he said. Lesions resulting from the disease are usually found on the liver in the form of white or yellow areas. He said recommended treatment is 300 gm. of nf 180 per ton for at least a week.

Infectious synovitis, on the other hand, is usually found between 4 and 12 weeks of age. It causes lameness and joint difficulties, Dr. Cover said. Green droppings are early signs of the disease. Recommended treatment, he said, is 200 gm. Aureomycin for 5 to 7 days or 100 gm. potentiated with a low calcium diet.

Potentiation was the subject of Dr. E. Price, Chas. Pfizer & Co., Terre Haute, Ind., who spoke on "New Ways to Aid Effectiveness of Antibiotics." He said the word "potentiation," when applied to antibiotics, means making them more powerful.

There are two ways to do this, he said. Lowering the calcium in the diet is one. Calcium interferes with antibiotic absorption. But he pointed out that birds should not be kept on low calcium diets longer than one week.

Use of terephthalic acid is the second means of potentiation, he said. This, when added to feed, makes the antibiotics much more effective regardless of whether a low calcium diet is used, he stated.

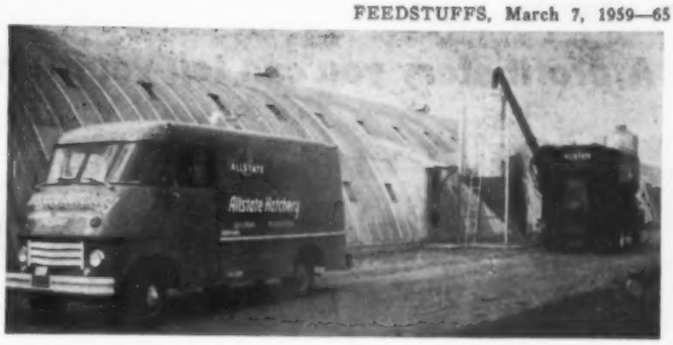
"The Present Status of CRD Control" was the subject of Dr. Roy Luginbuhl, University of Connecticut. He described four methods being used. These come under the headings of test and segregation, testing of small lots, vaccination and chemotherapy.

Vaccination has been tried only in the laboratory, but has given as much as 85% protection. He questioned whether this method would be accepted by the poultry industry.

Antibiotics are the method in use now, he said, but he stated that while they help to keep disease in check they do not cure it. The disease comes back after treatment is stopped, sometimes at even a higher rate, he said. He also indicated that resistant organisms are being built up through this method.

PPLO control was discussed by Dr. S. B. Hitchner, American Scientific Laboratories, Madison, Wis., who presented a paper on "The Use of the Blood Test in Controlling CRD." He outlined the four tests used to detect PPLO carriers in breeding flocks. At present, he said, the testing programs are used to determine flock status, not individual bird status, and he said he feels that any of the tests can do this. Removal of individual reactors in a flock will not clean up the infection, he said. He outlined and recommended a program for establishing clean breeding flocks. This included a careful management program, raising chicks in lots of 200 to 500 and testing and eliminating infected flocks.

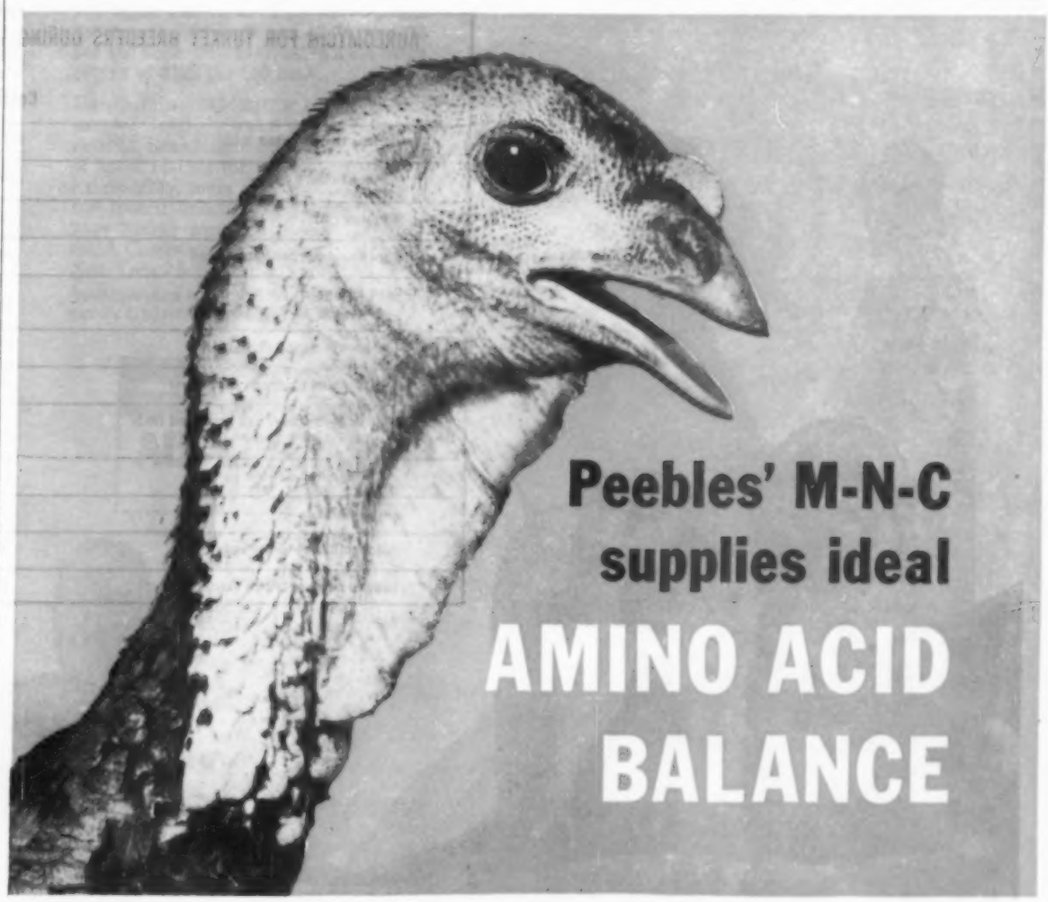
"The Proper Use of Sulfa Drugs" was discussed by Dr. George P. Faddoul, University of Massachusetts. He described the symptoms and lesions caused by the toxic effect of sulfa drugs. Sulfaquinoxaline is very dangerous at high levels, he stated, and he recommended that it be used only at low levels.



NEW FACILITIES—Shown is the new poultry breeding farm built recently by Allstate Hatchery, Willmar, Minn., about a mile west of Lake Lillian, Minn. The new breeding farm, along with two others now in operation by the firm, provides a total of 36,000 breeders from which the firm's LX-300 and Rich Line 109 chicks originate.

Dr. S. A. Edgar, Alabama Polytechnic Institute, presented "Latest Information on Coccidiosis Vaccination." He reviewed the problem of coccidiosis and recommended that at least replacement flocks be immunized by inoculation at about three

(Turn to page 68)



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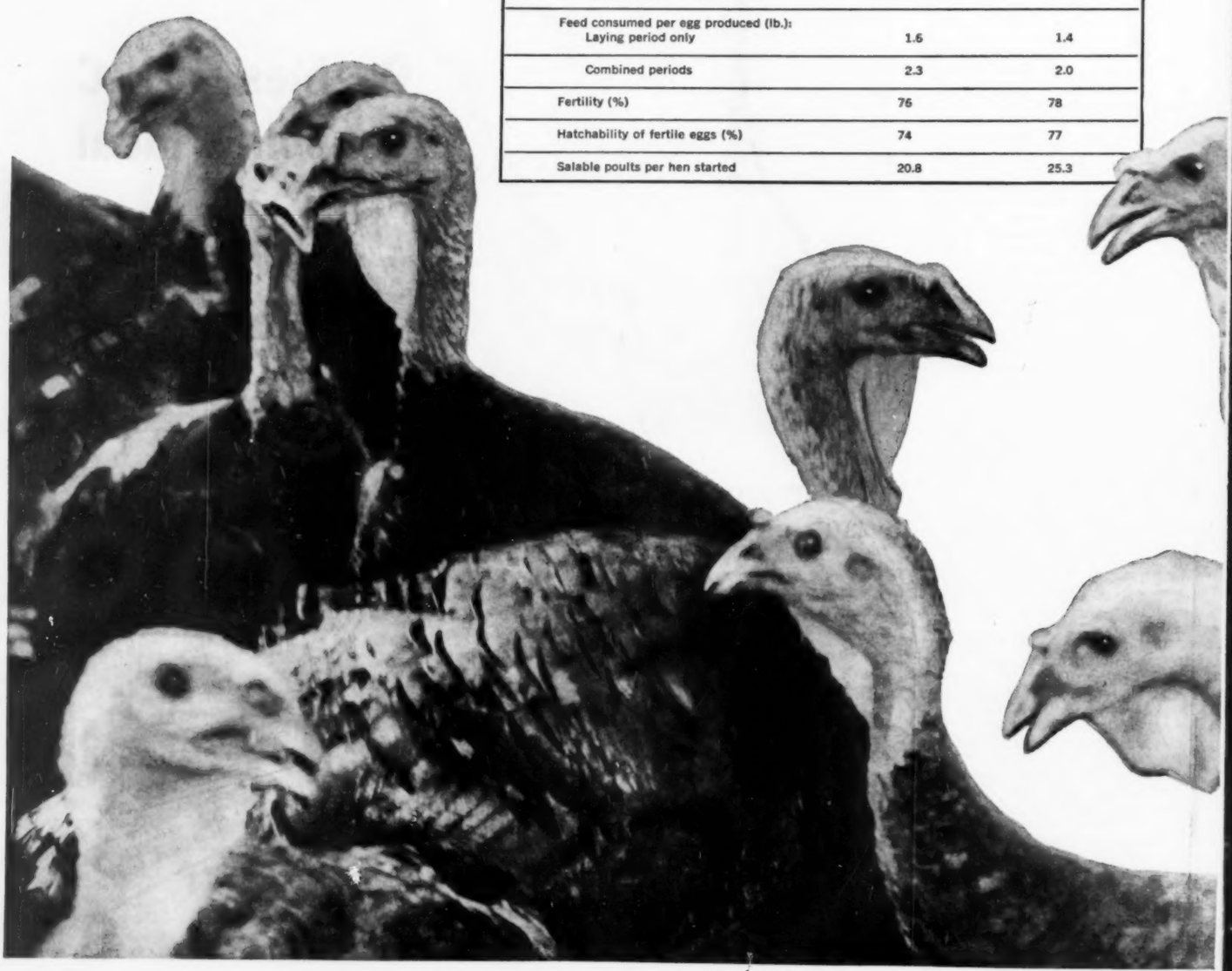
How to get $222 per 100 turkey

AUREOMYCIN FOR TURKEY BREEDERS DURING THE EGG LAYING SEASON

	Control	Aureomycin (100 grams per ton)
Number hens started	250	202
Number toms	29	27
Mortality (%)	3.9	2.2
Eggs produced per hen started	43	48
Feed consumed per hen (lb.): Pre-laying period (28 days)	29	28
Laying period (102 days)	70	69
Combined periods (130 days)	99	97
Feed consumed per egg produced (lb.): Laying period only	1.6	1.4
Combined periods	2.3	2.0
Fertility (%)	76	78
Hatchability of fertile eggs (%)	74	77
Salable poults per hen started	20.8	25.3



extra return breeding hens

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A flock of 452 broad-breasted bronze turkey hens were divided into two groups. One group of 250 received no AUREOMYCIN. The other group of 202 received AUREOMYCIN at the rate of 100 grams per ton of feed for a period of 4 months and 10 days. Supplementation with AUREOMYCIN began approximately one month before the hens started laying.

The group fed AUREOMYCIN laid 12% more eggs on 0.2 of a pound less feed per egg laid, and produced 4.5 more salable poults per hen. The cost of feeding AUREOMYCIN was 48¢ per hen or $48 per 100 hens. The value of 4.5 extra poults per hen at $.60 each was $2.70 or $270 per 100 hens. This resulted in a net extra return of $222 per 100 hens.

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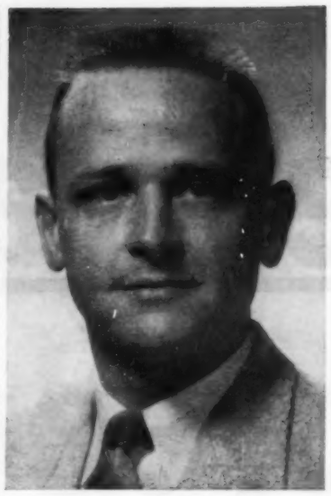
days of age. He advocated that a coccidiostat be used continuously up to six weeks of age in these flocks. This program, he said, will reduce losses, cut the cost of medication and get the birds immune to coccidiosis before other stresses come along.

"Poultry Meat Inspection, and Why Birds Are Condemned" was discussed by Dr. Daniel DeCamp, assistant chief, poultry inspection branch, U.S. Department of Agriculture. He brought out that the main problems the inspector finds are lesions, bruises and contamination. Birds that show general evidence of disease are condemned, while those with only local evidence are trimmed of the affected area. Birds with leucosis and tuberculosis are always condemned. With other troubles, it depends on the amount of evidence and whether the trouble is all through the body.

Dr. W. Malcom Reid, poultry department, University of Georgia, Athens, discussed "Worm Control Through Management and Proper Use of Medication." He outlined the many round and tapeworm problems. Roundworms, he said, cause the greatest damage when they are in the larval stage. Tapeworms are spread by an intermediate host that is a specific insect for each type of worm. Controlling the insects is the best preventive, he said. He recommended piperazine for roundworm treatment, but didn't advocate using it unless it was needed. For tapeworms, he advocated treatment also when needed, but advocated management as the first requirement in worm control.



John R. Gaston

SALES SPECIALIST — The appointment of John R. Gaston, formerly swine herdsman for Mississippi State University, as swine sales specialist for Cosby-Hodges Milling Co., Birmingham, Ala., has been announced by J. C. Hodges, Jr., executive vice president. A native of Coahoma County, Mississippi, and a graduate of Clarksdale High School, Mr. Gaston served in the Air Force six years and graduated from Mississippi State University with a major in animal husbandry.

Coccidiosis

Coccidiosis was discussed thoroughly at the conference. The evening program was entirely devoted to a panel on the subject. R. G. Strout, UNH, moderated the panel. Members were Dr. F. V. Washko, Merck & Co., Rahway, N.J.; Dr. Paul Harwood, Hess & Clark, Inc., Ashland, Ohio; Dr. Frederick Coulston, Sterling Drug, Inc., Rensselaer, N.Y.; Dr. T. A. Hymas, Dow Chemical Co., Midland, Mich.; Dr. N. F. Morehouse, Dr. Salsbury's Laboratories, Charles City, Iowa; Dr. Sterling Brackett, American Cyanamid Co., Princeton, N.J., and Dr. S. A. Edgar, Alabama Polytechnic Institute, Auburn.

The subject was a hot one, and when the moderator finally terminated the discussion, there were many unanswered questions. These were turned over to the next day's final question and answer moderator, William Haffert, Jr., editor of Broiler Industry and the Poultry Digest.

He took care of the questions on other subjects in an orderly manner, but couldn't keep the lid on when the coccidiosis questions started. It looked for a while as if it would last until next year's conference started. But even excited men must eat, and an hour and a half after the planned adjournment time the meeting adjourned, but the discussion continued at the lunch tables, and will be thoroughly "rehashed" in the poultry houses of the Northeast during coming months.

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UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Dehydrated Alfalfa Prices

Dehydrated alfalfa prices display a very strong seasonal movement. As everyone who buys or sells dehydrated alfalfa knows, prices fluctuate widely during each year. This article is written to give you a better idea of how far prices go up and down during a year and also when you can expect prices to change direction.

More often than not, dehydrated alfalfa prices reach their yearly high in December through February as is pictured in Exhibit 1. You will find in this exhibit a graphic display of the index of seasonal variation. Note how prices tend to fall, reaching a seasonal low in June.

This index of seasonal variation is merely a statistical measure used to indicate price changes over a period of years on a ratio basis compared to the trend. The shaded band around the solid line indicates the extent to which each of the years has followed the typical seasonal pattern. The narrower the band, the more regular the price pattern. The wider the band, the more unreliable is the index as an indicator of prices for the period ahead.

The index shows that dehydrated alfalfa meal has a very strong price seasonal. This characteristic, of course, is one of the problems faced by the dehydration industry and by the users of dehydrated alfalfa.

EXHIBIT 1. Dehydrated alfalfa, index of seasonal price variations, Kansas City.

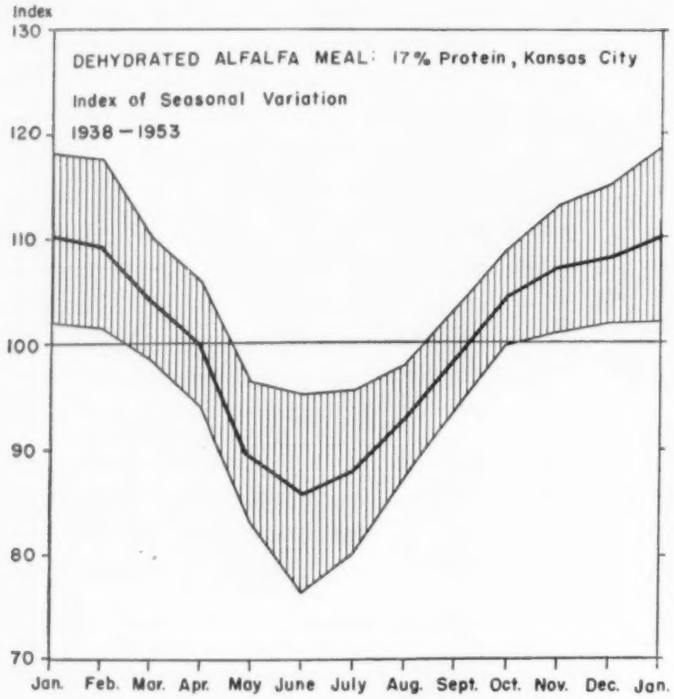
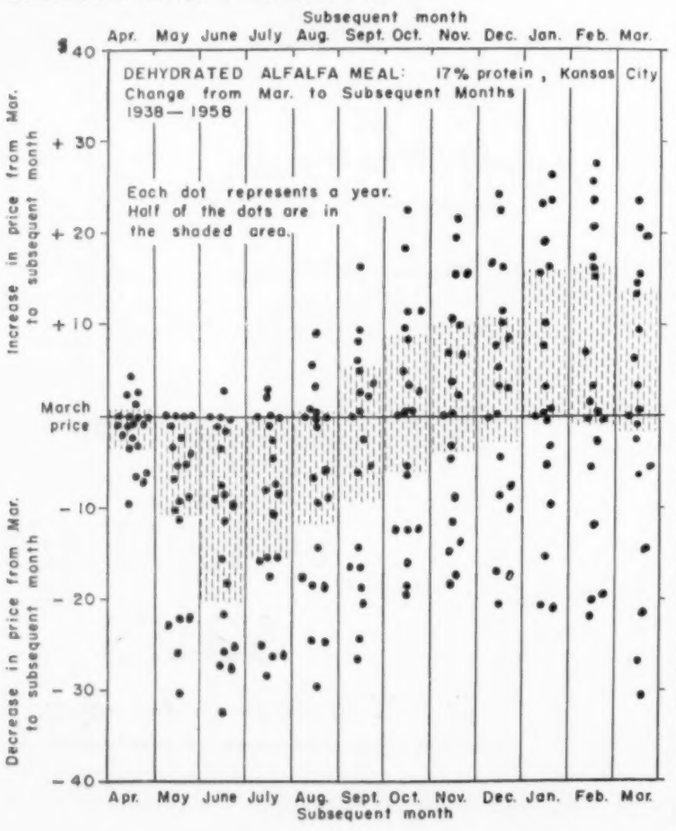


EXHIBIT 2. Dehydrated alfalfa meal, 17% protein, Kansas City, change from March to subsequent months, 1938-1958.


Subsequent month
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
$40
DEHYDRATED ALFALFA MEAL: 17% protein, Kansas City
Change from Mar. to Subsequent Months
1938—1958
Each dot represents a year.
Half of the dots are in the shaded area.
Increase in price from Mar. to subsequent month
+ 30
+ 20
+ 10
March price
- 10
- 20
- 30
- 40
Decrease in price from Mar. to subsequent month
Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar.
Subsequent month

Production

Markets reflect the balance between the amount offered for sale and the amount buyers are willing to purchase, at different prices. A large proportion of the annual output of dehydrated alfalfa is produced during the May-September period. This, of course, coincides with plant growth of alfalfa. The availability of much of the yearly supply during the summer season exceeds demand during that period at the higher level of prices. Prices, therefore, are lowered to induce increased purchases as a consequence of this seasonal relationship between production and utilization.

Prices This Season

You buy on the market and not on the average. Although indexes are useful to gain an understanding of seasonal price fluctuation, we must recognize that you don't buy on the basis of indexes.

In order to give you more specific information relative to prices for the remainder of the season, we have prepared Exhibit 2.

The purpose of Exhibit 2 is to illustrate how prices have changed after March. Here is how to use Exhibit 2. For example, there is a dot in the April column at the +5 level. This means that prices went up $5 from March to April one of the years 1938-1958. Reading over into the September column you will find a dot at the +16 level. This means prices went up $16 from March to September during one of the years.

Other months may be read in the same manner. The shaded area includes the middle half to give you a general picture. As you can see, prices usually advance in the winter months, decline in the summer months.

Remember, each dot represents a change in any given year from March to the following months indicated at the top and the bottom of the column. Prices used were based on 17% protein at Kansas City as quoted by the Market News Service of the U.S. Department of Agriculture. Prices of other qualities and other localities might be different somewhat, but generally these prices are representative of the changes which occur.

Considering the season which is to end shortly, it seems reasonable to expect prices of dehydrated alfalfa to decline in April this year and to be lower in May and June. Price declines likely will be modified somewhat this year with the improved ability to store dehydrated alfalfa with less loss of nutrients.

Robert D. Willasson

JOINS W. P. MANN—A new member of the W. P. Mann Sales Co., Inc., Omaha, Neb., is Robert D. Willasson. He has joined W. P. Mann, president of the firm, as a partner and vice president. A native of Iowa, Mr. Willasson for the past eight years has been associated with Merchants Chemical Co., Omaha, selling feed ingredients in Iowa. His previous experience was also in feed ingredient sales work. In his new association, Mr. Willasson will continue to call on the trade in Iowa, selling the complete line of vitamins, antibiotics, minerals and other feed ingredients and additives handled by the W. P. Mann Sales Co.

Ralston Purina Opens Los Angeles Laboratory

LOS ANGELES—Ralston Purina Co.'s new western division laboratory here was opened officially Feb. 9-10 with open house ceremonies.

The facilities were visited Feb. 9 by some 75 students of agriculture coming from colleges in the area. Visiting students came from California Polytechnic College, San Luis Obispo; California Polytechnic College at Pomona, and Mt. San Antonio College at Pomona.

On Feb. 10, livestock and poultry feeders, and feed dealers from throughout southern California made a tour of the Purina mill at Los Angeles as well as the laboratory.

Participating in the programs for both days were Robert A. Moffitt, manager of the laboratory; H. C. Schaefer, St. Louis, manager of all Ralston Purina chemical laboratories; J. P. Andrews, manager of the Purina feed mill in Los Angeles, and R. C. Morton, St. Louis, manager of the educational division in the company's public relations department.

The new laboratory will be the quality control headquarters for 14 Purina plants in the western part of the country. It will serve Purina plants in an area extending from Spokane, Wash., to Ft. Worth, Texas.

The laboratory, officials said, is equipped with the most modern facilities for checking the quality of incoming ingredients and outgoing finished products.

Between 4,000 and 5,000 separate tests—or assays—will be made at the laboratory each month to check the quality of ingredients and finished products. The laboratory's facilities are capable of making approximately 30 different types of quality control tests. The laboratory will be staffed by eight scientists and technicians.

Burrus Mills Notes Gain in Income

DALLAS — Net income of Burrus Mills, Inc., Dallas, for six months ended Dec. 31, amounted to $1,913,030, compared with $1,144,091 in the corresponding period of the previous year, a gain of 67%. Gross operating income was $30,592,177, compared with $26,735,107 in the preceding year, a gain of 14%.

Working capital was $10,465,000, an all-time high in the history of the corporation, practically double the level that prevailed June 30, 1955, prior to the initiation of the company's tent storage project for grain which brought sharp losses in subsequent years.

The ratio of current assets to current liabilities also was at an all-time high of 6.7 to 1. Net worth is shown on the statement at $14,890,000 and total resources $20,549,000.

Recovery in 1960

Jack P. Burrus, president of the company, told stockholders that if profits from domestic operations continue in the future months at the same level as in the past half year, the company's loss on the tent storage operation would be recovered by May 3, 1960.

The improvement in profits in the past six months came principally from the grain division, Mr. Burrus said, and to a lesser extent from the bag plant, the storage subsidiary Burrus enterprises, and from Cuban operations. Losses in the domestic flour milling division were smaller, he said, and although feed mills at Ft. Worth and Havana continued to operate profitably, they did not show improvement over the previous year.

Washington Pellet Firm Tells Rebuilding Plans

MONSE, WASH.—Rebuilding plans indicate that a new Okanagan Valley Pellets plant to replace the one destroyed by fire will be in production by haying time, it was announced by Bud Priest, a partner in the enterprise.

"We plan to use steel bins and put the mill inside a steel building which we bought and will bring over from Grand Coulee," Mr. Priest said. More fire precautions will go into rebuilding, he said. An underground tank with a capacity of 1,500 gallons and a gasoline powered pump and fire hose will be on standby duty at the plant.

C. W. Bordner, Red Reybolds and Mr. Priest are partners in the firm, which is operated on the Monse farm leased by Mr. Bordner.

NEW FIRM ANNOUNCED

MEDFORD, WIS. — A new firm here is Central Mink Foods, Inc., formed to produce mink foods from meat packing house by-products and fish. The company will also produce mink food supplements, including cereals and antibiotics.

Central Soya Obtains River Frontage Option

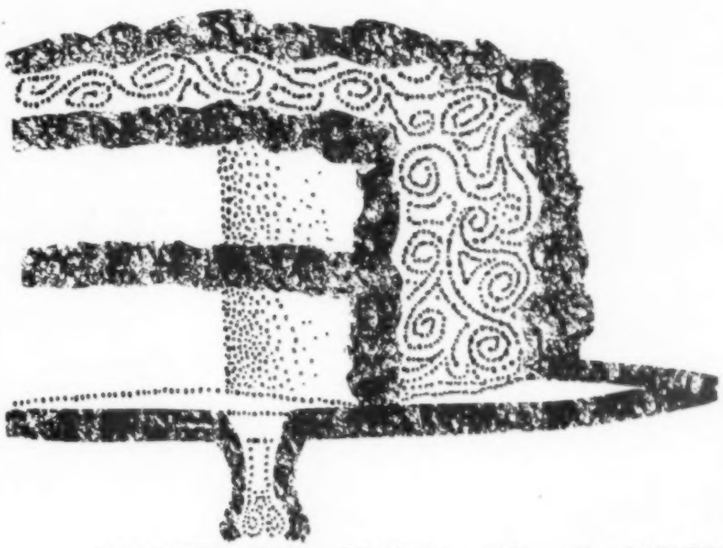
FT. WAYNE, IND.—An option to purchase a 21-acre piece of land at Mt. Vernon, Ind., with substantial frontage on the Ohio River, has been acquired by Central Soya Co., Inc., Ft. Wayne.

Dale W. McMillen, Jr., company president, said, "A grain merchandising operation is planned for the site in the not too distant future.

"The facilities to be erected on the Mt. Vernon site will be served by the Chicago & Eastern Illinois railroad, and they will undoubtedly be completely diversified to include truck and barge operations as well."

NEW ADDITION

PELLA, IOWA—A bulk feed mill is a new addition to the facilities of the Farmers Cooperative Exchange, Pella. A $75,000 construction project, the new mill has a capacity of 100 tons of feed.



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If you're mixing your own brand of feeds, these New Englander products are for you! Ocean-Fresh Redfish meal, solubles from edible fish, and other farm-proven ingredients give them every essential vitamin, the highest quality protein, and a full measure of unknown growth factors — everything your feeds need to boost egg production and hatchability, to produce maximum feed efficiency in broilers, turkeys and hogs. The uniformity and potency of Gorton's Blends are guaranteed. Best of all, one of these great pre-mixes will completely fortify any feed you mix. You save money, to say nothing of mixing time and inventory space. Write us today for the name of our distributor near you . . . ask for our folder on Gorton's Blends.

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Grain Sorghum Group Outlines Plan To Find Markets in Western Europe

LUBBOCK, TEXAS — Positive steps to gain new markets for grain sorghums are being taken by high plains farmers in Texas in an effort to offset effects of lower price supports, Delmer G. Nelson, executive vice president of the Grain Sorghum Producers Assn., Amarillo, announced here.

Speaking before the Grain Drying & Storage Conference held at Texas Technological College, he outlined a program to get grain sorghum customers in Western Europe.

More than 300 grain and equipment dealers and elevator operators from 13 states, attending the meeting to hear discussions of grain drying and storage developments, applauded the program with the Foreign Agricultural Service which was firmed up in December under provisions of the Agricultural Trade & Assistance Act.

"Our market development program is aimed to increase use of American feed grain—and particularly grain sorghums—in Italy, Turkey, Greece, Germany and the United Kingdom," Mr. Nelson said.

Estimating that the lower price supports for grain sorghums will cost the high plains sorghum growers some $36 million (based on 1958 crop figures), Mr. Nelson said the producers association's program could "stalloff" a possible collapse of price supports and, in turn, storage programs.

He also mentioned these possible results of the program: (1) less pressure for further expansion of grain storage facilities, (2) facilitated turnover of grain stocks, (3) a solid basis to keep grain farmers in business by showing that an effort is being made to establish a market for their products, and (4) if the program is effective, it may give the grain trade a chance to "trade" instead of merely storing products.

Five-Point Plan

Mr. Nelson said the Grain Sorghum Producers Assn. has a five-point plan which will go into effect in coming weeks.

"We will first conduct market studies and surveys to locate obstacles restricting U.S. feed grain exports in Europe. Assistance will be given to foreign buyers, importers and processors in learning the value of U.S. feed grains," he said.

"The association will also arrange for transportation, printing and distribution of promotional materials about U.S. feed grains. An exhibit of types and qualities of U.S. feed grains, manufactured and mixed feed grains will be displayed at trade fairs, and milling and stock feeding centers," he added.

Mr. Nelson said the association also will work with specific individuals within various European countries under separate project agreements.

He figured the $36 million "loss" in grain sorghum revenue facing high plains growers on the basis of 4 million acres planted in 1958. Half of this acreage was irrigated, and it produced an average of 4,000 lb. per acre. The 31¢ cut in the price support will cost a total of $12.40 an acre or an estimated $24 million, he said.

The high plains produced an average of 2,000 lb. per acre on areas not irrigated in 1958 and the $6.20 price cut per acre is estimated at $12 million by the association executive.

Thus the new $1.52 price support for grain sorghums will cost the high plains approximately $36 million unless new markets are found, he pointed out.

Better teamwork in agriculture and a better balanced program between agriculture and other indus-

Appearance may be improved through better design, sharper color printing, reproportioning, or better choice of outside wall.

A frank discussion with us may result in a more attractive bag, reduced production costs and increased sales of your product.

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The Newest KRAFTPACKER
will handle any free-flowing material accurately, with more accuracy, than any bag filling machine of its type!

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Use Your Own Salt and Calcium with Herman Nagel Formula B
...to Supply Every Needed Mineral
in a form so soluble "it melts on your tongue."
The HERMAN NAGEL Co.
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Presenting

A NEW ERA IN RUMINANT NUTRITION

SILO-ZYME

Here, at last . . . after years of scientific research and practical field testing by dozens of professional dairymen and beef cattle feeders, is SILO-ZYME, a product called by many the most important forward step in ruminant nutrition in the past fifty years.

SILO-ZYME is a *new and different* silage *activator,* a product that provides an economical and effective way to increase the nutrient values in silage . . . a way to accelerate the natural biochemical processes which are known to produce . . . and protect . . . good silage.

SILO-ZYME is composed of silage bacteria culture dried and preserved by a *patented process,* combined with a culture of a select strain of the food mold Aspergillus oryzae. Here's what SILO-ZYME does in the silo:

1. Through its enzymatic action, SILO-ZYME promotes the rapid growth of the beneficial organisms in the silage material and of those organisms which are added to the culture . . . thus sharply reducing the time required to complete the ensiling process.
2. Protects the vital nutritional elements in silage by inhibiting the development of undesirable organisms which cause spoilage and foul odors.
3. Enhances the natural, desirable flavor and aroma factors.
4. Speeds the conversion of starch to sugar . . . helps break down cellulose . . . helps convert sugars to lactic acid and acetic acid, and proteins to peptides and amino acids.
5. Protects and improves palatability.

By accelerating processes which are known to produce good silage and by protecting and improving the odor, SILO-ZYME proves its amazing ability to spark beneficial nutritional improvements in the silage itself . . . improvements which can help the feeder reduce his over-all feed costs and *make more money.*

Using the SILO-ZYME base, SILO-ZYME *Concentrate* will be manufactured and sold by strategically located distributors all across the country. You owe it to yourself and your business to investigate this entirely new selling field today . . . right now . . . while some choice manufacturing and retailing territories are still open.

DON'T TAKE OUR WORD FOR IT

Here's what cooperating farms and ranches say about SILO-ZYME:

"Silage went a fourth further . . . change in odor is amazing . . . positively would not put up grass silage without your product."

"Silage came out of the silo the same color it went in . . . and the odor was very sweet."

"The thirty head of cattle I fed on nothing but silage and pasture gained approximately 2½ pounds a day."

"Used SILO-ZYME on half of a 250-ton pit silo, and in the treated portion there was absolutely no spoilage. They needed only about half as much silage."

(Names and addresses available on request.)

FOR THE COMPLETE STORY . . . FOR THE ANSWERS TO ALL YOUR QUESTIONS . . . WRITE, WIRE OR TELEPHONE TO:

THE

Biochemical Corporation OF AMERICA

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A POINT TO REMEMBER

PILOT BRAND OYSTER SHELL

HELPS YOU AND YOUR CUSTOMERS MAKE MORE MONEY

Poultry raisers know that PILOT BRAND helps them get more high quality eggs with stronger shells . . . the kind that bring top prices in the market.

Alert dealers, aware of the steady profits PILOT BRAND gives them, stock and display this best seller all of the time. And national advertising in leading farm journals and on 70 key radio stations is constantly increasing the demand for PILOT BRAND.

It's good, profitable business to push PILOT BRAND Oyster Shell . . . the largest selling, finest quality eggshell material in the world.

PILOT BRAND OYSTER SHELL FOR POULTRY

Oyster Shell Products Company
Mobile, Alabama

NEW TEXAS CONFERENCE OFFICERS—Named recently to head the 1960 Grain Drying & Storage Conference at Texas Technological College, Lubbock, were (left to right): Fred T. Dines, president, and Will Schroeder, vice president, both of Amarillo; Charles Poole, Lubbock, treasurer; Fred Rabe, Dallas, program chairman, and Prof. Ira Williams, Texas Tech, program consultant. More than 300 grain dealers, elevator operators and equipment representatives from 13 states attended the 1959 conference held Feb. 18-19 at Texas Tech.

tries was called for by Gerald W. Thomas, dean of agriculture at Texas Tech.

"You folks interested in grain drying and storage have opportunities to contribute to many of these objectives—particularly those concerned with crop quality in the steps between the producer and the consumer, final costs of the product to the consumer and marketing and distribution," he said.

Speakers discussing storage and drying problems covered the anticipated need for storage, grain sanitation, chemical residues in grain, grain inspection and grain drying.

Albert I. Eads, assistant chief of the storage management division of the Commodity Stabilization Service office in Dallas, said that unless the new wheat crop is far better than the December forecast, not much additional grain storage space will be needed in the Southwest.

He told those attending the conference that the CSS is neither discouraging nor encouraging additional construction in the high plains area.

In a discussion of undesirable chemical residues in grain, Dr. Donald W. Ashdown, Texas Tech entomologist, said they can best be avoided by careful selection and application of insecticides before grain matures.

Grain sanitation, discussed by W. S. Allen, extension farm structures specialist from Texas A&M College, can be boiled down to simply "keeping grain clean," he said.

This means constant checking, supervision and surveillance of grain storage and hauling must be maintained to avoid contamination of grain, he said.

Drying

W. V. Hukill, agricultural engineer in charge of grain storage investigations for the U.S. Department of Agriculture at the Iowa Experiment Station, discussed grain ventilation and drying patterns.

Four approaches were made to the problem of non-uniform air flow in drying grain in recent observations, he said. The approaches were: (1) ventilation pattern studies, including pressure patterns, streamline patterns and iso-traverse time patterns; (2) drying pattern observations employing special moisture sensing elements buried in grain; (3) development of theoretical relationships existent between ventilation patterns and drying patterns, and (4) development of a special drying procedure employing the use of a chemical which changes color on drying, to observe drying patterns as well as to make a color movie picture of actual drying in process.

He said these studies revealed that in a non-linear air flow system a distorted or curved drying front develops with leading and lagging portions, and that the most retarded portion of this drying front in a non-linear system lags behind a horizon-

BINGMAN'S Animal Health Products

Less Mastitis—Higher Milk Production — More Profits

new approach to Herd Health

Results of tests using BINGMAN'S P-17

During this test period herds were fed BINGMAN'S P-17 at low level.*

	FIRST TEST			SECOND TEST (in 60 days*)			
Herds Tested	Quarters Tested	Clear	Infd.	Quarters Tested	Clear	Infd.	Percent Cleared
A.	32	21	11	28	28	0	100%
B.	95	76	19	112	108	4	79%
C.	80	34	46	68	55	13	72%
D.	68	52	16	68	64	4	78%
E.	74	38	36	79	72	7	81%
F.	83	69	14	78	76	2	85%
G.	60	34	26	44	39	5	81%
H.	36	27	9	28	26	2	77%
I.	16	11	5	16	15	1	80%
J.	32	16	16	28	25	3	81%
K.	48	41	7	60	59	1	86%
	624	419	205	609	567	42	79.5%

INDICATION OF SEVERITY OF INFECTION

Degree	1st Test	2nd Test
Slight	94	30
Infected (Mastitis)	66	9
Chronic (Mastitis)	45	3
Total	205	42

BINGMAN'S P-17

WHEN FED AS DIRECTED P-17

Aids in Control of MASTITIS

Aids in Reduction of SCOURS

Aids in Prevention or Treatment of FOOT ROT

Aids in Reduction of RESPIRATORY INFECTIONS

ASK ABOUT BINGMAN'S P-17 GUARANTEED FEEDING PROGRAM!

BINGMAN LABORATORIES, INC.
A Subsidiary of S & H LABORATORIES, Inc., CALDWELL, OHIO
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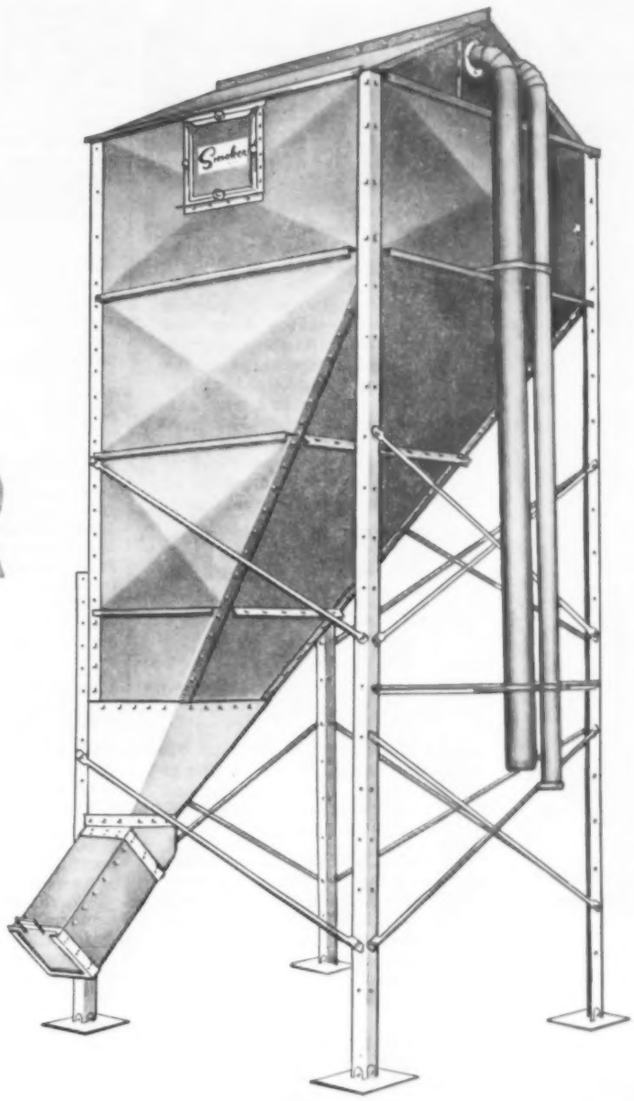

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Smoker BULK FEED STORAGE BINS

HERE'S how to help your customers save feed, money and storage space. Easy to erect and assemble, all-metal Smoker Feed Bins are weathertight and verminproof, for indoor or outdoor use. Capacity is 4 to 10 tons of heavy chick mash. Built of rust-resistant, heavy-gauge galvanized steel. Bolted construction throughout prevents sagging, buckling or swaying. Easy to fill by air or auger. Sixty-degree slope of sides assures free-flowing discharge. Square shape fits all types of installations. Convenient side draw-off can be placed anywhere. Adaptable for both dairy and poultry feed.

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Smoker Bulk Storage Bins,
Intercourse, Pennsylvania

Please send me details on Smoker Bulk Feed Storage Bins.

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. . . says Ben Parks
Ideal Elevator Co.,
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"We have had over 3 years of trouble-free service from our Brower Mixer; it has never required any replacement parts. We not only mix our own brand of feeds, but we also do a good custom mixing business. We have found the Brower Mixer to be a profit-building investment; without it we surely could not handle all the mixing our business requires."

BROWER
Whirlwind
MIXER

Dependability, fast mixing action, and low cost operation make Brower the WORLD'S LARGEST SELLING MIXER! Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix you can get. Every sack has the same even mixture.

FAST and ECONOMICAL—a perfect blend in about 10 minutes at a power cost of only 3¢ to 5¢ a ton. Five sizes —700, 1200, 2000, 3000 and 4000 pounds-per-batch mixing capacities. Above-floor and below-floor models. Heavy welded steel construction—built for years of trouble-free service.

Interior readily accessible through large hinged service door and hinged conveyor sleeve.

Notice the mixing paddle at top which WHIRLS the ingredients for the most thorough mix.

Glass observation window at eye level provides easy inspection of mixed feed at any time.

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BROWER MFG. CO.
402 N. 3rd, Quincy, Ill.

World's Largest Selling Mixer

tal drying front of an equivalent parallel flow system by a distance equal to approximately one half of the duct or air opening center to center spacing.

He presented a simple formula for predicting the increased amount of drying air required for a duct system over that which would be required for an equivalent parallel flow system. Also a method was presented to predict the increase in static pressure required to provide the necessary increase in the air flow rate to maintain equivalent drying performance of the two systems.

Officers

An Amarillo grain dealer, Fred T. Dines, president of the Western Grain & Supply Co., was named president of the 1960 Grain Drying and Storage Conference at the closing session of the meeting.

The new vice president is Will Schroeder, president, A&S Steel Buildings, Inc., Amarillo, and the treasurer is Charles Poole, division distribution engineer for Pioneer Natural Gas Co. at Lubbock. Gene Linn, agriculture and livestock manager of the Lubbock Chamber of Commerce, was reelected secretary.

Chairman of the 1960 program is Fred Rabe, Dallas engineer. Prof. Ira Williams, head of the Texas Tech agricultural engineering department, will continue as program consultant for the conference.

California Elevators Plan Major Expansion

STOCKTON, CAL.—Stockton Elevators is planning a $1 million expansion program, with the first phase starting soon and the entire expansion project slated for completion by Sept. 15. This latest expansion will boost Stockton Elevators' grain storage capacity 60%.

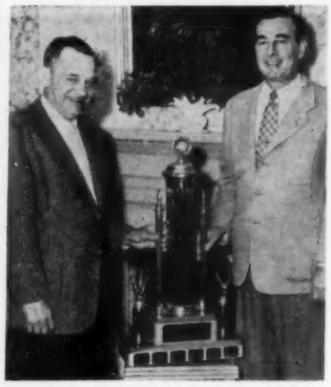
"We're adding facilities to handle another 1,800,000 bushels," declared Jack Harley, manager. The new facilities, he said, will increase capacity of the giant grain handling facility to 4,800,000 bushels.

Major features of Stockton Elevators' new expansion include the construction of concrete silos and steel tanks. Plans call for building 42 concrete silos, 120 ft. in height, which will handle a million bushels of grain. In addition, two large steel tank silos, 80 ft. high and 104 ft. in diameter, each handling 400,000 bushels, will be installed at the elevator site.

All bins will be fully aerated, and each silo will be equipped with temperature-recording and control devices.

FEED BUSINESS SOLD

ALGONA, IOWA—DeWayne Klein became the owner of the Robinson Produce Co. at Wesley and Algona recently when he purchased the business from Mrs. Donelle Devereaux. The firm will continue under the Robinson name and will handle the same lines of feeds.



SAFETY AWARD—R. M. Wilbur (right), Coronet Phosphate division of Smith-Douglass Co., Inc., Norfolk, Va., accepts the Ralph B. Douglass safety trophy for the third consecutive year. Presenting the trophy is J. A. Monroe, operations vice president of Smith-Douglass. Twelve Smith-Douglass plants compete for the traveling award. It is presented annually to the operation with the best safety record. The award will now be retained permanently at Coronet.

The most complete line of DOG FOOD ingredients

from ONE source

BOXER BRAND

44% SOY CAKE-LETS
expeller, pea-size
CORN KIB-LETS
expanded . . . kibbled
CORN FLAKES
cooked . . . toasted
WHEAT KIB-LETS
expanded . . . kibbled
WHEAT FLAKES
cooked . . . toasted
EXPELLER SOY BEAN MEAL
and other ingredient specialties

Nowhere else can you secure such a major part of your dog food ingredients. By combining your ingredient purchases in cars, mixed cars or LCL you are assured of freshness, and better inventory control with lower inventory investment. BOXER ingredients are manufactured by us specially for dogs—they are "prime" products, and not "by-products." Write for current prices and literature.

RALPH WELLS & CO.
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QUALITY DOG FOOD INGREDIENTS

More and More Buyers are Asking for . . . AND GETTING

MIDWEST
GREEN BANNER
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SPLIT-HOUSE TESTS PROVE

YOU CAN'T BEAT BROILERS BASED ON NICHOLS 108 MOTHERS AND LEADING MALES FOR GROWTH AND FEED EFFICIENCY UNDER COMMERCIAL CONDITIONS.

ALABAMA

Four lots of split-house tests — 5000 birds each lot — 2500 each side of house.

Age		Wt.	F.E.
9 wks 2 days	V108	3.39	2.36
	VX	3.38	2.35
8 wks 4 days	V108	3.07	2.22
	VX	3.06	2.31
9 wks 2 days	V108	3.30	2.36
	VX	3.34	2.28
9 wks 4 days	V108	3.71	2.21
	VX	3.61	2.23

DEL-MAR-VA
(Feed Concern)

		Wt.	F.E.
9 wks 3 days	V108	3.42	2.65
	VX	3.28	2.56

GEORGIA

		Wt.	F.E.
10 wks	V108	3.60	2.30
	VX	3.53	2.29

DEL-MAR-VA
All Trials
9 wks 3 days

	Wt.	F.E.
V108	3.55	2.63
VX	3.36	2.57
V108	3.49	2.64
VX	3.28	2.59
V108	3.49	2.69
VX	3.31	2.55
V108	3.45	2.58
VX	3.27	2.63
V108	3.43	2.69
VX	3.31	2.53
V108	3.41	2.69
VX	3.25	2.52
V108	3.40	2.61
VX	3.28	2.50
V108	3.39	2.63
VX	3.12	2.56
V108	3.30	2.72
VX	3.41	2.53
V108	3.23	2.65
VX	3.21	2.58

10 different feed trials using two popular crosses.

WANT YOUR OWN SPLIT-HOUSE TEST?
LET US KNOW
AND WE'LL HELP YOU SET IT UP.

And don't forget that there are no other birds that give you this kind of growth *PLUS* the production and hatchability you can count on from Nichols 108s.

RESEARCH MAKES THEM BETTER
NICHOLS

Nichols Incorporated

Exeter, New Hampshire

UNLOAD BULK CARS *FAST*...and *SAFE*

ONLY ELBA-WINCHDOZER HAS PUSH BUTTON CONTROL FOR MAXIMUM EFFICIENCY AND SAFETY IN UNLOADING BULK CARS

ELBA TELETRONIC CONTROL automatically starts and stops the scoop *at the touch of a finger.*

Elba-Winchdozer provides the most simplified system yet devised for bulk materials handling in box cars. With Elba's exclusive push button control, **at the scoop**, the operator has complete control of the winch and scoop. Built in electromagnetic clutch responds to commands instantly, makes unloading a one man operation that can cut your handling costs in half. Write for full information on this modern bulk handling system. Three models available, all reasonably priced.

ELBA CABLE HANDLING

ELBA CORPORATION OF AMERICA, 94-39 44th AVENUE, ELMHURST 73, L. I., NEW YORK

*Send this coupon **now** for complete specifications*

Elba Corporation of America, Dept. FS-37
94-39 44th Ave., Elmhurst 73, L. I., New York
Please send me full information on your Elba-Winchdozer system for bulk car unloading. I am particularly interested in the: DALLI ☐ BULLY ☐ MOBY ☐

NAME.....

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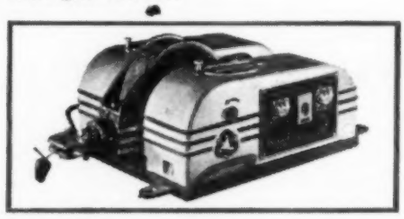
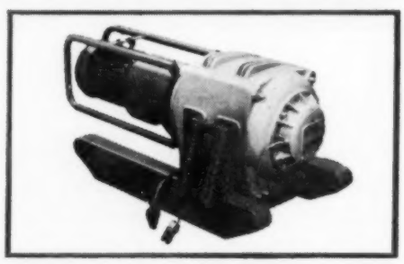
Choice territories available for qualified dealers.

DALLI – Popular standard model. Output – 30 tons of soft feed per hour. Generates a pull up to 1400 pounds. Powered by a 2.5 HP electric motor (220-440 volts) or 5 HP gasoline engine. It weighs 480 lbs.



BULLY – Extra power for heavier jobs and increased efficiency. Output – 40 tons of soft feed per hour. Generates a pull of 2400 pounds. Powered by a 3.5 HP electric motor (220-440 volts) or 8 HP gasoline engine. It weighs 870 lbs.



MOBY – A duplex unit, basically the same as the BULLY model. Output – 80 tons of soft feed per hour. Operates two scoops, each independently controlled by push-button switch. It weighs 946 lbs.

Dr. Horace J. Davis

EXPERT ON RUSSIA—A highlight of the program of the University of Maryland Nutrition Conference for Feed Manufacturers to be held March 19-20 at the Shoreham Hotel, Washington, will be an address by Dr. Horace J. Davis, former attache to the American embassy in Moscow. Dr. Davis will discuss "Agriculture in Russia." The program was planned jointly by the Maryland State Feed Industry Council and the University of Maryland staff.

Integration, Disease Topics for Poultrymen

NEWARK, DEL.—Agricultural integration, disease control and maintenance of flock health were among the topics discussed during the University of Delaware's annual Farm and Home Week program attended by poultrymen from the Delmarva Peninsula broiler-producing belt.

Agricultural integration, an important part of Delaware's broiler industry, was described as "skillful strategy, designed to establish a beachhead in the market place, with a minimum of risk" by Kenneth Hinshaw, director, information division, Eastern States Farmers' Exchange, Springfield, Mass.

Mr. Hinshaw emphasized that every farm product must fight for its own beachhead in the market place. "The unorganized, more hazardous, more inefficient way to land a product on this beachhead is applied when farmers produce their product willy-nilly and hope that somehow it can beat its way into consumption," he declared. "In agricultural integration, supplier, producer, processor and merchandiser unite and coordinate their forces."

Mr. Hinshaw said the word "agriculture" is close to being obsolete. "Agribusiness is a better term to describe agricultural production and the satellite businesses that orbit around it," he observed.

He said the leadership for agricultural integration can come from suppliers such as feed manufacturers, from processors such as meat packers, from merchandisers and chain store corporations or from farmers themselves through cooperatives.

Dr. Stephen B. Hitchner, research veterinarian, American Scientific Laboratories, Madison, Wis., described a new method of vaccination against infectious laryngotracheitis, which, he said, offers many advantages over the traditional brush application of vaccination to the vent.

Tests indicate that the vaccine may be effectively applied by the drop method, already in use for applying certain other types of vaccines.

Dr. Hitchner listed the following advantages offered in the new method: (1) Uniformity of dosage from bird to bird, (2) uniformity of method of application by different vaccinators and (3) ease, rapidity and cleanliness of the vaccination procedure. Birds also may be vaccinated at an earlier age by the drop method, the veterinarian pointed out.

Dr. William J. Benson, poultry pathologist with the University of Delaware, reported on research efforts aimed at controlling leukosis.

Vaccine Bill Passed

MONTPELIER, VT.—The House of Representatives in the Vermont Legislature has passed a bill which would allow poultrymen to possess fowl vaccine for infectious bronchitis or Newcastle disease without permission of the state commissioner of agriculture.

GET UNSURPASSED RESULTS
USE Ray Ewing PERFORMANCE PRODUCTS

Ray Ewing PERFORMANCE PRE-MIXES

HI-EFFICIENCY BROILER PRE-MIX
POULTRY BREEDER PRE-MIX
CHICK STARTER-GROWER PRE-MIX
LAYER PRE-MIX
CAGE LAYER PRE-MIX
TURKEY BREEDER PRE-MIX
TURKEY STARTER PRE-MIX
TURKEY GROWER PRE-MIX
SWINE PRE-MIX
SWINE PRE-MIX "H"
ANIMAL PRE-MIX
RUMINANT PRE-MIX
P-A-L PRE-MIX

Ray Ewing SPECIAL-PURPOSE PRODUCTS

Ray Ewing PIGMENTER—for better broiler pigmentation
Ray Ewing FLAVORS—liquid or dry
AniMol—All-Purpose
Dog Food Flavor
Ray Ewing ENZYME Supplement
Ray Ewing ATERRIMIN—growth stimulant for chicks and poults
Ray Ewing VITAMIN "A"—stabilized
Ray Ewing VITAMIN "E"—stabilized

Ray Ewing proven-performance products are quickly available from warehouses—coast-to-coast—and 5 major pre-mixing plants to fill all feed supplement requirements. Contact the Ray Ewing Representative in your area for expert "on-the-spot" feed formulation service.

QUALITY GOES IN THE Ray Ewing COMPANY BEFORE THE NAME GOES ON

Write regarding any combination of vitamins, antibiotics, and/or special ingredients.

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FORT WORTH, TEXAS • AMES, IOWA • COUNCIL BLUFFS, IOWA • LANCASTER, PENNSYLVANIA

SEND FOR THE NEW
ELTON CONVEYOR CATALOG
It will save money for you!
CHANTLAND MFG. CO.
Humboldt, Iowa

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STABILIZED MENHADEN WHOLE MEAL AND FISH MEAL

FIRST

- IN GROWTH FACTORS
- IN AVAILABILITY OF AMINO ACIDS
- IN METABOLIZABLE ENERGY VALUES

There is only one way to produce the best fish meal.

And that way is through a program of research and quality control that continues to improve the product year after year. Haynie's research facilities are the most extensive in the industry.

Here is what this has meant to Haynie HI-SEAS stabilized menhaden fish meal and whole meal:

- *The first anti-oxidant process of stabilizing meal.*
- *The industry's first one-to-process refrigerated facilities.*
- *Improved rapid-pass drying.*
- *Nutritional superiority.*

Small wonder that Haynie HI-SEAS has become the first choice of more and more feed manufacturers the country over. Call us about your needs.

Call Wildwood 2-7711 or write for full details

Refrigerated vessels—part of unique handling operation

Home of stabilized Hi-Seas meal—one of our fine plants

Newest rapid-pass driers preserve valuable nutrients

Extensive research facilities assure highest quality control

Haynie

PRODUCTS INCORPORATED

Wildwood, New Jersey

HI-SEAS

Animal Nutrition's Importance to Health Told to Veterinarians

DES MOINES—The importance of proper animal nutrition to productive health and prompt recovery from diseases and ailments was stressed at a recent meeting of Iowa Veterinary Medical Assn. members in Des Moines.

Dr. R. C. Klussendorf, director of veterinary medical services, Commercial Solvents Corp., Terre Haute, Ind., said nutritional deficiencies occur during periods of disease and other stress even when rations are fully ample for normal animals under normal conditions.

"The veterinarian must recognize symptoms of malnutrition and classify them as primary problems or secondary to other conditions," Dr. Klussendorf said. "Accurate observation and classification will enable the animal to return to state of productive health in the shortest time possible."

In discussing respiratory diseases of animals, Dr. Iain Paton, department of experimental medicine, Jensen - Salsbery Laboratories, Kansas City, Mo., outlined procedures from clinical examination, pathological typing to discussion of calf pneumonia, parasitic bronchitis and acute pulmonary emphysema.

Dr. V. D. Ladwig, Sac City, Iowa, discussed new trends in the swine industry and the part of the veterinarian in this new approach with normal and corrective swine rations. Dr. Ladwig also headed a general discussion of disease conditions throughout the life cycle of swine.

Dr. Samuel F. Scheidy, president-elect of the American Veterinary Medical Assn., discussed the major impact on the veterinary profession of new therapeutic drugs. Present indications are that several new drugs will make striking improvements in present methods of preventing and controlling animal diseases. Included in his discussion were tranquilizers-misotopes and medicated feeds in addition to other therapeutic agents.

Dr. Earle Raun, department of zoology and entomology, Iowa State College, reviewed recent developments in the use of radiation to sterilize adult insects to prevent the laying of fertile eggs. He also reviewed treatments to prevent louse and mange buildup during winter months, low pressure and cold weather spraying.

Dr. Erskine V. Morse, associate director of the Veterinary Medical Research Institute, Iowa State College, presented a paper on leptospirosis. He emphasized that leptospirosis is not one but a collection of infections caused by leptospira. It is responsible for annual losses of over $100 million in cattle alone. He discussed early symptoms and methods of treatment as well as control of the disease.

NEW PACKING PLANT

OMAHA — Omaha's 19th meat packing plant, known as the Nebraska-Iowa Dressed Beef Co., began operations recently. Only cattle are to be slaughtered and processed. Starting capacity will be 150 head daily, with cooler space for 250 carcasses. Officers are Jerry S. Volcek, president; Francis J. Murphy and Eugene A. Giermann, vice presidents, and Joseph T. Sternad, treasurer.

LA BUDDE

MILWAUKEE, WIS.

MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

MODERN FEED PLANTS

By IBBERSON

THE McCABE CO.
MONTEVIDEO, MINN.

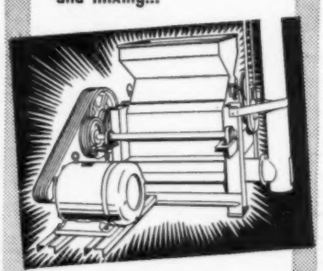
T. E. IBBERSON COMPANY

ENGINEERS & CONTRACTORS Since 1881

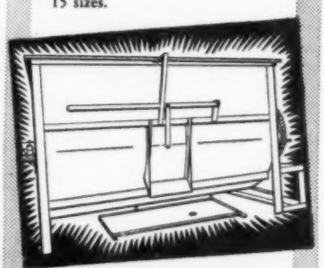
Minneapolis, Minnesota

FORMULA FOR PROFITS

Almost FANTASTIC PROFITS are being made in grain rolling and mixing...



Example: $30.00 per hour with this Giant Krimper-Kracker®... and as much as $10.00 per hour with our little 10x10" mill. 15 sizes.



PRECISION MIXING FOR DRY AND LIQUID MOLASSES FEED MIXING

- 100 pound to 8000 pound sizes
- Portable or Stationary Mixers

TODAY you want to figure how much it costs you *not* to have this equipment rather than the price, which happily is most reasonable.

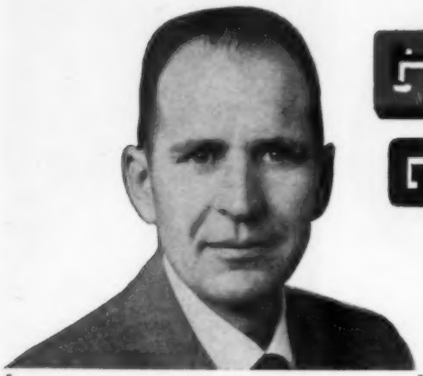
This sweeping change-over to dust-free rolled grains gives you a once-in-a-lifetime fortune making opportunity. Ask about our corn and cob Granulator too!

Come in and see our wonderful new factory; no finer production equipment anywhere.

DAVIS BUILT HCD SINCE 1894 WRITE FOR FREE CATALOG TODAY

H. C. DAVIS SONS MFG. CO.

P.O. Box FB 185 Bonner Springs, Kansas



GRAN-I-GRIT'S NEW GRIT FEEDING PROGRAM

made Gurney Hodges 3c EXTRA per broiler without Adding One Cent to his Cost

Mr. Gurney Hodges, a top broiler producer of Low Gap, North Carolina states:

"About two years ago I was persuaded to make a test on using larger sizes of grit on 4,000 broilers and the results were amazing.

"I followed GRAN-I-GRIT'S recommendation and fed chick size grit for one week, growing size grit for the next two weeks, broiler size grit for the next three weeks and hen size grit until my broilers were sold at 9 weeks 5 days of age.

"The birds consumed 180 lbs. of chick and growing size grit and 450 lbs. of broiler and hen size grit. I was well pleased that feeding larger sizes of GRAN-I-GRIT made me $125.85 or over 3c per broiler more profit than the other pen tested.

"I believe that feeding the larger sizes of grit was entirely responsible for my extra profits. Since then I have used this method of feeding GRAN-I-GRIT on other flocks with equally good results."

With today's low profit margins it is EXTREMELY IMPORTANT that both Broiler Growers and Egg Producers take advantage of new methods of operation that will increase their profits without adding to their costs.

It is just as important that you as a feed manufacturer, jobber or dealer know about new methods that will increase the profits from your feed.

Daily results from GRAN-I-GRIT'S New Grit Feeding Program are proving that both Broiler Growers and Egg Producers are getting better utilization from feed and are making more money by feeding larger sizes of grit.

GRAN-I-GRIT RESEARCH FIRST PIONEERED AND PROVED that feeding Larger Sizes of Grit Would Increase Profits

The North Carolina Granite Corporation maintains an able and efficient Research Department. Because of extensive tests run by this department over a long period of time, poultry raisers are now able to make INCREASED PROFITS through feeding larger sizes of GRAN-I-GRIT.

Larger sizes of GRAN-I-GRIT not only grind feed finer and more efficiently in the gizzard, but they also keep the digestive tract open for full feed utilization by completely grinding feathers and fibrous litter that all birds eat.

Small grit that passes through the digestive tract, rather than staying and working in the gizzard, takes space needed for feed.

By informing your customers of GRAN-I-GRIT'S New Grit Feeding Program you can show them how to make more money from your feed, which in turn will stimulate your sales.

Get Full Details— GRAN-I-GRIT'S *New* GRIT FEEDING Program

Top poultrymen use GRAN-I-GRIT. They know from experience that GRAN-I-GRIT is the best profit producing grit they can use. GRAN-I-GRIT is insoluble . . . does not dissolve and cannot change the mineral balance of your feed.

We have a new GRAN-I-GRIT circular that gives full details of the New GRAN-I-GRIT program of feeding larger sizes of grit . . . the program that is proving so successful with both Broiler Growers and Egg Producers. Write today for a free copy.

GRAN-I-GRIT is packed in 10-lb. Easy to Stack, Self Feeding Packs that save valuable storage space, time and labor and in 25, 50 and 80-lb. multiwall paper bags.

GRAN-I-GRIT HOLDS THE BIRD'S EYE

Selected 20 to One over other Types of Poultry Grit

Chicks, broilers, pullets or layers must consume the proper amount of grit to get maximum results from feed and GRIT MUST HAVE EYE APPEAL before poultry will eat it. Side by side tests on poultry farms and by leading poultry authorities have proven that poultry of all ages prefer a light gray grit with black specks . . . THE GRAN-I-GRIT TYPE . . . (as much as ten, fifteen, twenty to one) over grit of other colors.

NORTH CAROLINA GRANITE CORP., Mount Airy, North Carolina

Member of Granite Grit Institute of America

THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT

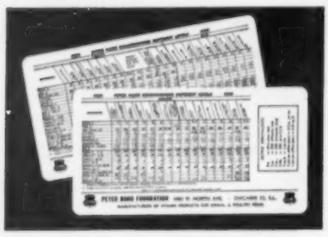
WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7398—Nutrient Level Card

The Peter Hand Foundation announces the availability of a "Recommended Nutrient Level Card for 1959." The card contains information on suggested levels of protein, cal-



ories, vitamins and other needs for many types of chicken, turkey and swine feeds. Recommendations for complete feeds as well as supplements are included on the cards. To obtain a card, check No. 7398 on the coupon and mail.

No. 7399—Power Shovel

A one man power shovel has been introduced by Seedburo Equipment Co. Designed for complete portability, the shovel has many built-in safety features, the company says. A push-button in the shovel handle controls the pulling action and functions as a "dead man" switch, giving positive control to the operator. If the operator releases the push-button, the pulling cycle stops instantly. According to company literature, the unit is

especially adaptable for flat storage buildings, feeding marine legs on barges and unloading truck grain, feed or fertilizer. Various scoop designs are available as standard equipment. Check No. 7399 and mail.

No. 7404—Grain Storage Building

A "Rigid Frame" grain storage building has been announced by Stran-Steel Corp., a division of National Steel Corp. The building, called the Grain-Master "100", is 100 ft. wide and 53 ft. high at the roof peak.

It is designed for large capacity storage. Features, according to company literature, include a three-section bulk head door, access ladder and platform, heavy-duty air tunnel, colored steel panels and provisions for faster loading. Complete information is available from the company. Check No. 7404 on the coupon and mail.

No. 7400—Poultry Pesticide

American Scientific Laboratories, Inc., announces a poultry pesticide, "ASL Litter Dust," a 4% malathion powder for treating litter to kill and control lice, chicken red mites and

northern fowl mites, all in one application. The product is available in shaker cans and larger receptacles, and is said to have no adverse effects on birds, company literature claims. The company said it is effective against pests resistant to older chemicals. Information is available upon request. Check No. 7400 on the coupon and mail to this publication.

No. 7406—Laboratory Service Data

The University of Wisconsin Alumni Research Foundation has announced the availability of a new brochure and a series of leaflets describing the various laboratory services the group offers to industries. Included among the services discussed are nutrition, chemistry, animal studies, toxicity testing, microbiology, insecticide testing and food technology. The brochure is fully illustrated, showing the various phases of laboratory research in actual photos. The individual leaflets discuss the specific service in detail. For information on how to receive this data, check No. 7406 on the coupon and mail.

No. 7405—Silo Counter Display

A 9½ in. tall silo counter display for use in merchandising silage flavor preservative made with Silo-Joy, has been announced by Flavor Corporation of America. Inside the miniature silo are one-cow samples of the Silo-Joy forage flavor preservative for the dealers to give to farmers. A teaspoonful of Silo-Joy is packaged in individual plastic bags. Farmers are asked to dissolve the sample in 1 gal. of water and sprinkle lightly over silage, hay, grains or any roughage before feeding. Literature on the

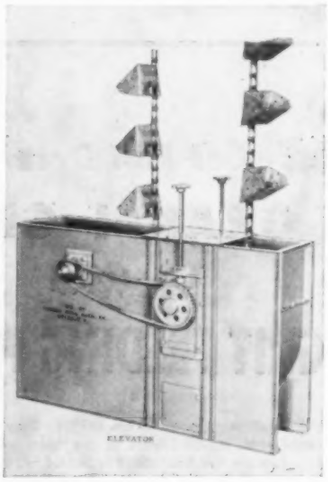
product is hung on a hook from the side of the silo. Check No. 7405 on the coupon and mail for details.

No. 7402—Bulletin on Motor Starters

The advantages of centralizing motor starters in control panels are discussed in a 4-page technical bulletin offered by the Richardson Scale Co. Bulletin 58-C cites initial costs, wiring, engineering time and maintenance costs savings that result from mounting the starter centers in control panels at the time the panel is constructed, the company said. Six photographs of motor starter centers mounted in Richardson control panels at various plants illustrate the bulletin. For copies, check No. 7402 on the coupon and mail.

No. 7403—Elevator Equipment

Munson Mill Machinery Co. announces a line of dust-tight, fire-resistant elevator equipment. Included in the line are heads, boots and leggings. The equipment is engineered in accordance with individual elevator needs, the company said. The top half of the head is built in two sections, which may be removed without



disturbing the head bearings or motor. Clean-out and maintenance operations on the steel boots are simplified and speeded by two removable panel-type doors, located on opposite sides of the boot, the company claimed. An inspection door is also provided in the legging. For further information, check No. 7403 on the coupon and mail.

No. 7401—Loader for Hopper Cars

A loader for hopper cars has been announced by Productive Acres Manufacturing Co. Called the "Pamco E-Z Loader for Hopper Cars," the unit unloaded 8½ tons of feed from a car in 21 minutes, the company said. The loader is light, according to company literature, and can be handled by one man. No concrete pit is

Send me information on the items marked:

- ☐ No. 7398—Nutrient Level Card
- ☐ No. 7399—Power Shovel
- ☐ No. 7400—Poultry Pesticide
- ☐ No. 7401—Loader for Hopper Cars
- ☐ No. 7402—Bulletin on Motor Starters
- ☐ No. 7403—Elevator Equipment
- ☐ No. 7404—Grain Storage Building
- ☐ No. 7405—Silo Counter Display
- ☐ No. 7406—Laboratory Service Data
- ☐ No. 7407—Grain Conveyor, Cleaner
- ☐ No. 7408—Air Delivery Feeder

(PLEASE PRINT OR TYPE)

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

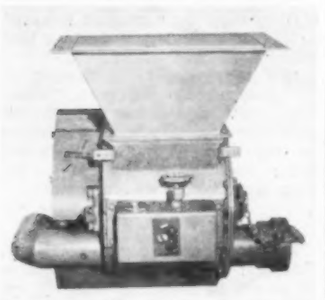
P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

necessary and the car need not be spotted in a certain location. The loader is added equipment for the company's line of hydraulic trucks. More information is available. Check No. 7401 on the coupon and mail to this publication.

No. 7408—Air Delivery Feeder

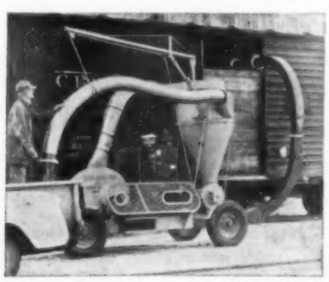
Ripco Air Systems has introduced the Ripco truck conversion kit for flexible air hose delivery of granular material. With the kit, the company says, dealers and suppliers can convert present rolling stock, either flat bed or dump style, to an air delivery system. Simplicity of installation is



one of the unit's features, the company says. The feeder installed at the rear of the truck bed is hydraulically driven, eliminating the need for long power take off shafts and flexible drives. On flat bed trucks, the feeder can be used as a bag to bulk delivery, or gravity fed from a dump style body. More information is available. Check No. 7408 and mail for details.

No. 7407—Grain Conveyor, Cleaner

Dunbar-Kapple, Inc., announces a new "Vac-U-Vator." The firm says the new unit is capable of conveying, cleaning, conditioning and aerating grain from 30 to 90% faster and moving grain up to 50% more distance. Embodying a different pneumatic engineering concept, the unit operates with what is described as a highly efficient balance of free air, power and grain. Called "dynamic flow balance," the new pneumatic system provides increased grain-moving speed and reduced operating costs, the firm claims. The completely mobile unit is available in two and three stage sizes. The new two-stage "Vac" is rated at 20% more capacity than current three-stage Vac-U-Vators. The new three-stage machine is said to nearly double the output of its three-stage contemporary, particularly on long distances. Heart of the increased moving capacity is a specially designed 26-in. fan wheel. This, combined with other features, provides grain handling up to 3,000 bu. an hour, to distances of 500 ft. and more, according to the manufacturer. It elevates to more than 75 ft. Complete information is available by checking No. 7407 on the coupon and mailing.



Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7328—Temperature monitoring system, Rolfes Grain Aeration Companies.

No. 7329—Animal health product display, American Cyanamid Co.

FISH MEAL • FISH SOLUBLES
LIVER MEAL—VITAMIN OILS
FEATHER MEAL—FEED INGREDIENTS
ALBUMINA SUPPLY CO., INC.
82 Beaver St., New York 5, N. Y.

SUNSET FEED & GRAIN CO., INC.
PHONE CLEV. 2938 — 805 Dun Building, Buffalo 2, N.Y. — TWX BU 71
FEED JOBBERS
AND
DISTRIBUTORS OF
KELLOGG HOMINY FEED — HUBINGER GLUTEN FEED
DYNAFOS DICALCIUM PHOSPHATE AND MULTIFOS
SODIUM BENTONITE
PACIFIC MOLASSES — PILOT OYSTER SHELLS
DU PONT'S "TWO-SIXTY-TWO" FEED COMPOUND
STONEMO GRANITE GRIT — CALF MANNA
NOPCO FEED SUPPLEMENTS
WHEAT GERM — WHEAT GERM OIL
AGRI-TECH ALFALFA PRODUCTS
INQUIRIES APPRECIATED

"Our new STRONG-SCOTT equipment makes operating much easier and faster."

Strong Scott

says Carl Smith, Manager of Farmers Co-op Grain & Stock Company, LeRoy, Minnesota.

AUTOMATION? "You bet," says Carl Smith, Manager of the Farmers Co-op Grain & Stock Company of LeRoy, Minnesota. "Where we used to have five men to do the work, we now need only one man and can triple our output."

"With the Strong-Scott quick-change Hammermill we have as many as five different grinds in process without shutting down the Hammermill," said Smith. "The farmers really like this because in busy times they used to wait as long as five or six hours for processing and now 20 to 25 minutes is as long as anyone has to wait."

The new addition to the Farmers Co-op Grain & Stock Company at LeRoy, Minnesota, built by **VOLDEN CONSTRUCTION**, Henning, Minnesota, has been in operation only a few months and already the Strong-Scott Hammermill and two Triple Action Mixers have proven they will quickly pay for themselves. "On a normal grind, we turn out two ton in about eight minutes and can then mix two ton thoroughly in three to five minutes in one of our Triple Action Mixers," says Carl. "On a fine grind, which is our 8/64 screen," added Smith, "we grind five ton an hour."

Additional Strong-Scott equipment in use includes legs, drag, crusher, baggers, and a molasses handling system. "A big plus for us is the fine service we get from the Strong-Scott Company," Smith concluded.

A remote control for each of the five quick-change screens gives Carl Kempe, operator, immediate selection of grinding size without shutting down the Hammermill between grinds.

Two Strong-Scott TRIPLE ACTION MIXERS provide fast, efficient batch mixing with added molasses when required.

EQUIPMENT DESIGNED FOR BETTER PROCESSING

The Strong Scott Mfg. Co.
451 Taft Street N.E.
Minneapolis 13, Minnesota

Dept. LM-59
Please send me complete information on the Strong-Scott . . .
☐ TRIPLE ACTION MIXER
☐ HAMMERMILL
Name_____
Address_____
Title_____

No. 7330—Flock replacement folder, Agricultural Extension Service, University of Georgia, College of Agriculture, Athens, Ga.

No. 7331—Bulk handling system, Ranger Equipment Co.

No. 7332—Batching systems brochure, Toledo Scale, Division of Toledo Scale Corp.

No. 7333—Bulletin on corn cutter, Sprout, Waldron & Co., Inc.

No. 7334—Push-button, automatic feeder, Automatic Equipment Manufacturing Co.

No. 7335—Conveyor belt, Imperial Belting Co.

No. 7336—Wirebound pallet box, General Box Co.

No. 7337—Plate magnet, Stearns Magnetic Products.

No. 7338—Advertising promotion offer, Hess & Clark, Inc.

No. 7339—Automatic bag closer, Dave Fischbein Co.

No. 7340—Leghorn nest, Keenco Farm Equipment Co.

No. 7341—Knife cutter data sheet, Sprout, Waldron & Co.

No. 7342—Folder on magnetic separators, Jacobson Machine Works, Inc.

No. 7343—Rotary paddle feeder, Richardson Scale Co.

No. 7344—Coccidiosis control booklet, Dorn & Mitchell Laboratories, Inc.

No. 7345—Drug proportioner, Vineland Poultry Laboratories.

No. 7346—Booklet on materials handling, Tote System, Inc.

No. 2086—Temperature monitoring device, Rolfes Grain Aeration Companies.

No. 7347—Feed analysis table, The Nopco Chemical Co.

No. 7348—Steel egg cooler, Sunset Equipment Co.

No. 7349—Bulletin on roller mills, Sprout, Waldron & Co., Inc.

No. 7350—White Cornish breeder cockerel, Jeff D. Brown Co.

No. 7351—Fork lift, Towmotor Corp.

No. 7352—Data sheet on rail car, General American Transportation Corp.

No. 7353—Moisture balance, Central Scientific Co.

No. 7354—Mastitis treatment, Chas. Pfizer & Co.

No. 7355—Story on plant layout, Sprout, Waldron & Co., Inc.

No. 7356—Sow farrowing stall, Bel Echo Manufacturing Co.

No. 7357—Corrugated grain bins, Butler Manufacturing Co.

No. 7358—New products folder, Prater Pulverizer Co.

No. 7360—Bag weigher-filler, Bemis Bro. Bag Co.

No. 7361—Conveyor system, Wyatt Manufacturing Co., Inc.

No. 7362—Control panel, Richardson Scale Co.

No. 7363—Live poult display, Western Condensing Co.

No. 2985—Moisture balance, Seedburo Equipment Co.

No. 7364—Dog food ingredient, Western Condensing Co.

No. 7365—Bulk feed body, North American Manufacturing Co.

No. 7366—Poultry supply catalog, Anderson Box Co.

No. 7367—All-purpose litter, the Bares Co.

No. 7368—Bagging, weighing machine, Finco, Inc.

No. 7369—Semi-bulk handling system, Powell Pressed Steel Co.

No. 7370—Blackhead medication, Dr. Salsbury's Laboratories.

No. 7371—Herringbone milking stall, James Manufacturing Co.

No. 7372—Injectible iron, American Cyanamid Co.

No. 7373—Animal health display, Bingman Laboratories, Inc.

No. 7374—Bulk hog feeder, Leach Manufacturing Co.

No. 7375—Control for hammermills, Schutte Pulverizer Co.

No. 7376—Bag packer, Bemis Bro. Bag Co.

No. 7377—Pneumatic conveyor data, Sprout, Waldron & Co., Inc.

No. 8378—Bulletin on pulleys, Sprout, Waldron & Co., Inc.

No. 7379—Mobile feed mill, Seco, Inc.

No. 7380—Scoop control switch, Alden division, Amercon Corp.

No. 7381—Grain drier, Grain Drying Equipment Co., Inc.

No. 7382—Flexible coupling, T. B. Wood's Son Co.

No. 7383—Bag packer, Bemis Bro. Bag Co.

No. 7384—Automatic bag ejector, Richardson Scale Co.

No. 7385—Auger cattle feeder, James Manufacturing Co.

No. 7359—Magnetic separator bulletin, Stearns Magnetic Products.

No. 7386—Data on fat addition, Sprout, Waldron & Co., Inc.

No. 7387—Coccidiosis book, Merck & Co., Inc.

No. 7388—Bulletin on blowers, Young Machinery Co., Inc.

No. 7389—Car shaker data sheet, Syntron Co.

No. 7390—Pig creep feeder, Moorman Manufacturing Co.

No. 7391—Movie on grit, Stone Mountain Grit Co.

No. 7392—Wall banner, Blatchford Calf Meal Co.

No. 7393—Automatic hog feeder, Precision Equipment Co.

No. 7394—Equipment catalog, Brower Manufacturing Co.

No. 7395—Power scoop data, Alden Equipment Division of Amercon Corp.

No. 7396—Poultry disease control, Associated Feed Products, Inc., and Naremco, Inc.

No. 7397—Bulk feed tanks, Agri-Tec Steel Corp.

An inebriated gentleman was downtown and realized he was in no condition to find his way home by himself. He staggered into one of the phone booths on the street and called his wife to come get him. He couldn't tell her where he was, however, and on his wife's instructions he left the booth to get his bearings. When he returned to the telephone he was heard to exclaim:

"I'm at the corner of Walk and Don't Walk."

◆ ◆ ◆

An old man who lives in Georgia still frequently complains about the suffering and the damage caused by the conflict which he always refers to as "The War Between the States."

"We're still suffering on account of that war," he remarked recently.

"But what made you think of that today?" he was asked.

"I'll tell you why I thought of it," snapped the old gent. "When those damyankees come through here with Sherman, they broke the hinges on the door of our smoke-house; today the dogs got in and ate up three hams before we found out."

◆ ◆ ◆

Mother of small boy to child psychiatrist: "Well, I don't know whether or not he feels insecure, but everybody else in the neighborhood certainly does!"

◆ ◆ ◆

On his tenth anniversary the bandleader who played over 2,000 dance dates was asked, "What have you had the most requests for?"

Replied the maestro, "Where's the men's room?"

◆ ◆ ◆

A demure young bride, a trifle pale, her lips set in a tremulous smile, slowly stepped down the long church aisle on the arm of her dignified but aging father.

As she reached the low platform before the altar, her tiny slippered foot brushed a potted fern, upsetting it. She looked down at the spilled dirt seriously, and her child-like eyes rose to the sedate face of the minister.

"That," she said, "is a —— of a place to put a plant!"

CHECKERBOARD GRAIN COMPANY

Buyers and Sellers
of
MILLFEEDS, GRAINS AND GRAIN PRODUCTS

CHICAGO KANSAS CITY ST. LOUIS MINNEAPOLIS

DIAMOND V BRAND

Fortify your feeds with
YEAST CULTURE
a natural source of
Digestive enzymes - B Vitamins including B_{12} - Unidentified Health and Growth factors - Values not obtainable from any other source.
For All Cattle, Hogs, Sheep, Chickens, Turkeys
Better Health, Growth and Production - Greater feed efficiency - Lower Feed cost
Yeast Culture values proven by state college tests
write . . . DIAMOND V MILLS, INC. • CEDAR RAPIDS, IOWA

INDUSTRY PROVED!
Wenger Animal Fat Feeder

Wenger's Series 100 Animal Fat Feeder was the first Liquid conditioning feeder developed to correctly meter liquid fats at their optimum mixing temperature into continuous mixers or pellet mills producing hard or soft pellets. Special 100 Series also available for feeding fats to batch mixers. Optional remote controls available for both.

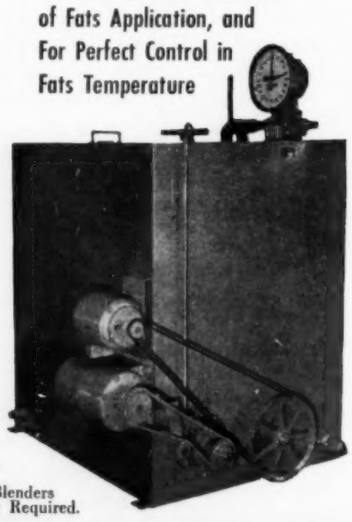
Fats are not to be fooled with. The right equipment is required for precision formulas — for economy of production — for satisfaction to your customers. *Now* after three years of use of the first Wenger Fat Feeders installed, mill superintendents report "correct, trouble-free performance".

More and more — customers of mills putting fats in certain formulas are finding the gain and growth advantages of fats.

Important fringe advantages to mill operation — increased pelleting capacity, reduced die wear and greater uniformity.

Write For Our Brochure On Animal Fat Feeding—Methods and Equipment.

PRODUCTION PROVED—
For Uniform, Unvarying, But Closely Adjustable Rates of Fats Application, and For Perfect Control in Fats Temperature



Three packaged models of Hi Speed Fat Mixers and Three Sizes of Multi-Blenders Also Available. Liquidmatic Remote Hydraulic Controls Means No Operator Required.

Wenger Mixer Manufacturing
SABETHA, KANSAS • PHONE 111
Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.

Have you heard the latest?

Notice how she throws that milk production of hers up to us all the time. You'd think we didn't know about SILO-JOY®—the forage flavor preservative that stops silage stink.

FLAVOR CORPORATION OF AMERICA
3037 North Clark Street • Chicago 14, Illinois

It's continuous!

No end to it! There's no end to the availability of Solulac, either. Every week of the year, Grain Processing Corporation produces this prime feed builder — has it available for the formulation of your feeds. So you can depend on a continuous supply. Solulac, with its high nutritional values, its GFF (Grain Fermentation Factors — unidentified growth factors found exclusively in Distillers Feeds) and vitamins, is guaranteed to be free flowing. Available in 50 and 100-pound bags or bulk carloads. For Solulac, or corn distillers dried grains — also in continuous supply — write, wire or phone.

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GRAIN PROCESSING CORPORATION

MUSCATINE, IOWA • Telephone AMherst 3-1321 TWX 495

Primary Fermentation Products

Member of the DISTILLERS FEED RESEARCH COUNCIL

Riboflavin — Vitamin B-12 — Bacitracin — GP-101, source of whey and other unidentified growth factors.

Virginia Feed Men Hear Talks on Nutrition Findings

ROANOKE, VA. — Discussions of new developments in livestock and poultry research, and marketing meat and poultry products made up the program of the Virginia Feed-Nutrition Conference in Roanoke this week.

"Feed to Food with Consumer Appeal" was the theme of the two-day meeting, sponsored by the Virginia State Feed Assn. and Virginia Polytechnic Institute with the cooperation of the Virginia Department of Agriculture and the American Feed Manufacturers Assn.

W. G. Ritchie, Petersburg, Va., and Paul M. Reeves, VPI, served as co-chairmen of the event. Committee members from the feed association were: S. E. Aylor, Lynchburg; R. T. Harper, Roanoke; W. H. Derr, Richmond; J. W. Moyers, Broadway, and C. W. Wampler, Jr., Harrisonburg. Committee members from VPI were: Dr. G. C. Graf; Dr. C. C. Brooks; Dr. R. W. Engel; Dr. E. L. Wisman; Dr. C. E. Howes; Dr. C. E. Holmes, and Prof. G. W. Litton.

SWINE SECTION—The first session consisted of an address on pork marketing, and two reviews of swine research and nutrition. Mr. Aylor, president of the feed association, presided over the sessions. Summaries of the addresses follow:

Patterning Pork on People's Preferences — Wells E. Hunt, Hygrade Food Products Corp.: Mr. Hunt said the swine industry needs a "prompt and great expansion of true merit buying" by packers, a continued expansion of multiple farrowing, genetic improvement of hog population and a continuation and increase, if possible, in improvements in feed.

He said many packers have developed systems and installed accounting equipment for a merit buying program, and that producers and market agencies as well as many packers need to be informed on the "hows and whys" of operating a true merit buying program.

Mr. Hunt commented that "all factors considered, the future of the pork industry is very optimistic..."

Recent Developments in Swine Nutrition—Dr. D. E. Becker, University of Illinois: Dr. Becker said the low-feed saving value per acre of pasture makes the use of highly-productive soils for hog pasture a questionable practice when alternative high-profit uses can be made of the land. "There appears to be no nutritional limitations so that the popularity of drylot feeding will increase in spite of certain management problems," he commented.

In discussing complete and free-choice rations, Dr. Becker said the pig may have shortcomings in his ability to properly balance his ration from a variety of feeds. "Recent evidence supports the view that complete rations made by grinding the grain and mixing it with the remainder of the ration will play an increasingly important role in swine feeding programs," he declared.

"On pasture, growing-finishing pigs of all weights gain more rapidly when fed complete rations than when fed a free-choice ration; however, when pigs are fed to heavier weights, there is little or no difference in efficiency of gains."

Comparisons of complete and free-choice rations in drylot (confinement or winter feeding) have yielded variable results, but data indicate that growing-finishing pigs fed complete rations show a rate and efficiency of gain at least equal, and sometimes superior, to that of pigs fed a free-choice ration, according to Dr. Becker.

"In a drylot program, the cost advantage in feeding complete rations made by grinding grain and mixing it with a typical commercial supplement rather than feeding grain and supplement, free-choice, is doubtful. On the other hand, on pasture the added rate and uniformity of gain will probably justify the cost of grinding and mixing," the speaker said.

Pellets for Swine

A beneficial value of pelleting swine rations is associated with the fiber content and results from a greater daily feed intake and less feed wastage, Dr. Becker said. He mentioned that evidence is not clear cut with rations in which cereals, such as corn, wheat and sorghum serve as the principal source of energy, and that pelleting produces

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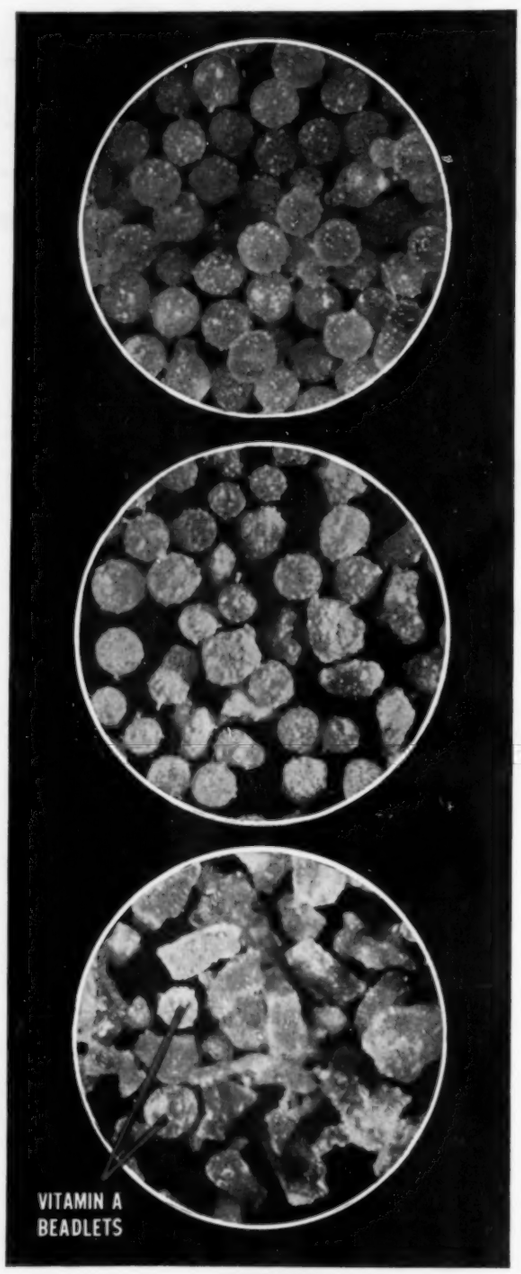

THREE PHOTOMICROGRAPHS OF VITAMIN A PRODUCTS

Top: Micratized Vitamin A, Nopcay® Type III. Spherical beadlets are A-active particles. Note that *all* particles in this product are A-active.

Center: Micratized Vitamin A, Nopcay Type V. Note that almost all particles are A-active. Occasional non-spherical particles are diluent, and included to assure free-flowing properties of product.

Bottom: A typical competitive product. Only two spherical A-active beadlets surrounded by non-active filler.

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little or no improvement of a corn-soybean oil meal ration.

Another subject discussed by the speaker was sweetening agents. He said Illinois workers have observed that nursing pigs ate feeds or mixtures containing molasses in greater quantity than the same preparations without molasses. "The amounts of rolled oats and dried skim milk consumed on a voluntary basis were markedly increased by the addition of cane molasses. Also, the addition of 10% corn sugar increased palatability," he explained.

"In preference studies with creep fed pigs, a ration with .05% saccharin was clearly less palatable than creep rations with cane sugar. Actually, the pigs selected only slightly more of a diet containing saccharin than of a diet without a sweetening agent."

Amino Acids

Dr. Becker said recent studies have demonstrated that recommended protein levels may be deficient for adequate amino acid nutrition of growing swine.

"Although the individual amino acids have been studied on a very limited number of proteins, it is clear that amino acid needs at one protein level will not satisfy the need at all levels of adequate protein intake. For instance, Illinois workers have found that the lysine and isoleucine requirements, expressed as a percentage of the protein, decrease as the level of protein fed increases," the speaker explained.

Swine Nutrition Research—Dr. C. C. Brooks, Virginia Polytechnic Institute: Supplementing peanut oil meal-corn rations with L-lysine and L-lysine and DL-methionine or natural sources of these amino acids (blood meal or fish meal) resulted in highly significant improvement in rate of gain and muscle development in VPI experiments, Dr. Brooks said.

He mentioned other VPI research which indicated that 6-8% inedible lard can be used efficiently as a source of added energy in standard rations, or as a means of building up energy in high fiber rations.

"Increasing the protein level above the minimum required for shelled corn rations failed to improve shelled corn-fat rations," Dr. Brooks reported.

Energy-Protein Balance

Speaking of energy-protein relationships, he said that in two trials using rations with energy levels ranging from approximately 70% to 85% TDN, there has been no significant difference in protein need for maximum growth due to energy level. He mentioned that backfat thickness varied from 1.35" in the pigs on low energy rations to 1.55" on the high energy. Loin eye area varied according to protein level in the ration from 3.34 sq. in. in lots on the low protein to 4.15 sq. in. in the pigs on the high protein.

Dr. Brooks also talked about management, parasite treatment and antibiotic studies.

"Pigs fed weaning to market weight on concrete gained faster than pigs fed on dirt lots, while pigs fed on dirt lots gained faster than pigs fed on pasture. Pigs fed on pasture had less backfat and larger loin eye areas than pigs fed on dry lot," he reported.

"Hygromycin was effective in removing adult ascarids in three trials, but failed to reduce liver damage when fed to pigs after weaning age. The effect on rate of gain appeared to depend largely on the level of parasite infestation. Sodium fluoride treatment increased rate of gain in two trials, even in lots that were later fed hygromycin."

The speaker reported that in three trials, Aureomycin fed without worm treatment produced gains equal to gains of pigs fed hygromycin. Pigs treated with sodium fluoride and then fed Aureomycin made significantly faster gains than any other treatments in four trials.

He said that the effect of low and high energy rations on various reproductive phenomena are being investigated, and that data from a limited number of gilts have indicated that the lower level of energy is preferable.

POULTRY SECTION — Poultry feeding programs, poultry nutrition research and a new way to market cut-up poultry were discussed during the poultry session, moderated by L. B. Dietrick of VPI.

Pre-Packaging Cut-up Poultry — Thomas F. Honney, the Cryovac Co.: Mr. Honney mentioned great increases in broiler production, then

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"87% production," says Clem Royster, Sr. (shown at left), Lawndale, N.C. "I've gotten this rate of lay since my Maxi-Lay Queens were seven months old. It's higher than I've ever had from other breeds—and I've been in the poultry business for nine years. What surprises me most is the size of the eggs. My Maxi-Lay Queens are just barely eight months old, yet last week I sold twice as many LARGE eggs as medium."

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described how a chain grocery firm has boosted broiler sales by freezing broilers at the point of packaging so that they are able to insure the ultimate in product protection, stop shrink after cutting, eliminate return due to spoilage, and relieve their back room packaging needs. He said the freezing operation is not intended to merchandise the poultry as a frozen product, but that freezing is used as a vehicle to make it possible to transport pre-packaged poultry "from Arkansas to California" in a form which can be merchandised in the regular poultry case with the ultimate of product protection.

Poultry Department at VPI—Dr. C. E. Howes, VPI: Dr. Howes described the VPI poultry research organization, and said that the program includes many detailed studies in nutrition, breeding, management, processing and physiology.

"These activities are being greatly expanded at present and are greatly facilitated by the excellent cooperation of specialists in other fields at VPI," Dr. Howes said.

Feeding Replacement Pullets—Dr. P. R. Record, Security Mills, Inc., Knoxville, Tenn.: Dr. Record opened his talk by saying that the results of experimental work to date and current recommendations of breeders and feed manufacturers regarding feeding programs for replacement pullets are far from consistent.

In his discussion he explained that age at sexual maturity depends upon the degree of restriction of energy intake during the growing period, but that just how far this can be carried out is still to be determined. He asked the question, "Would it be possible to prolong the productive ability of the hen over a longer period of time by regulating the age at sexual maturity through energy restriction during the growing period?"

"When we have used a restricted feed intake program in the field we have encountered certain problems. In quite a few instances, it has been difficult to sell the feeder on the idea that it is absolutely essential that he have more than the usual amount of feeder space.

"With birds grown in confinement, especially, the problem of cannibalism is more acute on a restricted feed intake program. Getting the grower, particularly the contract grower, to follow the feeding schedule sometimes presents difficulties. If as experimental evidence indicates, energy intake can be properly controlled through the use of a low protein-high fiber diet fed ad libitum, most of these problems can be overcome."

The speaker went on to say that while the results reported to date seem to indicate that restricted energy intake during the growing period of pullets definitely influences the rate of growth and age at sexual maturity, there seem to be breed differences as to the effect on egg size. Likewise, some of the available data indicate that while sexual maturity is delayed, and in some instances early egg size is affected, total production per hen is not changed.

"There is also some question as to the effect that the season or time of year at which the chicks are hatched and the pullets raised may have on the results obtained with a restricted feeding program for pullets," Dr. Record said.

"In light of these questions, it is apparent that the best method of feeding replacement pullets has not been fully determined. The experimental data gathered to date point the way toward further research."

Feeding the High Production Layer—G. R. Ingram, Alabama Poultry Enterprise, Inc.: Recent developments in the field of mineral metabolism have brought about a renewed interest in this phase of nutrition, Mr. Ingram said. By using purified or special rations many of the trace minerals have been shown to be essential for chickens. The minute quantities required have led nutritionists to recommend their use as a safety factor.

"Our tests with trace mineral mixes have failed to show any need for any additions to poultry rations of a practical type other than salt, calcium, phosphorus and manganese. For a laying ration, it seems a waste of money to add trace minerals. I am also sure that the generally accepted level for inorganic phosphorus in laying rations is too high."

Vitamin Requirements

In a brief discussion of vitamin requirements, the speaker said the NRC recommendations for vitamins adequately meet the need for layers under most conditions. "Extremely high energy rations probably require higher vitamin levels; however, at present such rations are not economically feasible," he explained. Mr. Ingram commented that vitamins A, D, and riboflavin are the only ones that must be added to most practical laying rations and, in most cases, vitamin A can also be omitted.

The speaker noted that the protein requirement of layers is still one of the most controversial subjects in the entire field of poultry nutrition.

He said that at his company no difference in the requirement of caged layers and floor flocks has been found.

"With the productive energy level of all rations constant at approximately 1000 calories, calculated protein levels of 14, 16 and 18% have supported the same level of egg production. Feed conversion on the 16 and 18% rations has been better than the 14% level; however, 18% has been no better than 16%. Feed conversion has been improved enough to justify the 16% protein ration. The 12% protein ration proved inadequate

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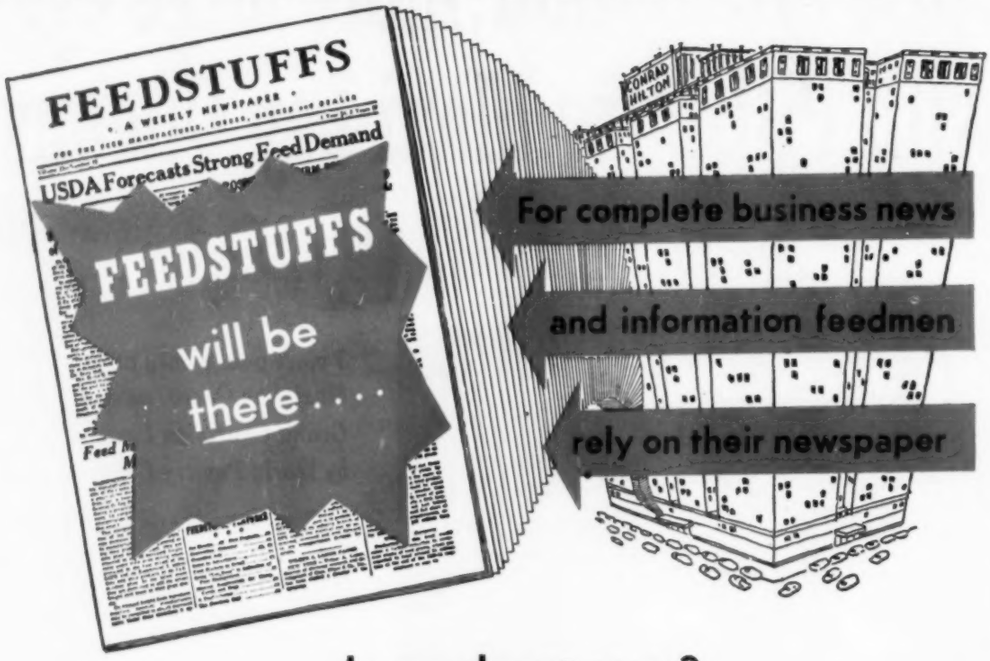

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Chlortetracycline Level (grams)	NO	NO	NO	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	YES P-50 T-100	YES P-100 T-200	NO	NO	YES P-50 T-100
Oxytetracycline Level (grams)	NO	NO	NO	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	YES P-50 T-100	YES P-100 T-200	NO	NO	YES 50
Bacitracin Level (grams)	NO	NO	NO	NO	NO	NO	YES P-50 T-100	YES P-50 T-100	NO	NO	NO	NO	YES P-50 T-100
Penicillin and Streptomycin Level (grams)	NO	NO	NO	NO	NO	NO	YES 75 Strep 25 Pen	YES 75 Strep 25 Pen	YES 75 Strep 25 Pen	NO	NO	NO	NO
Penicillin Level (grams)	NO	NO	NO	NO	NO	NO	YES T-100	YES T-100	NO	NO	NO	NO	NO
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in our tests. We recommend a 16% protein ration for most conditions," the speaker explained.

He said tests indicate that during extremely hot weather, levels of protein up to 18% are needed.

The speaker mentioned a study of the methionine requirement of layers which indicated that the laying hen will maintain production on a level of methionine as low as .22%, but that for adequate egg size and body weight maintenance, a level of .26% is necessary.

He mentioned other tests which indicated that birds will not consume as much feed on an all-mash system as on a mash-grain system, but produce as many eggs.

"In a series of large scale tests with several different antibiotics as well as 3-nitro fed continuously at various levels, or at rather high levels at regular intervals, we have failed to show any benefit from any product tested," the speaker continued.

Mr. Ingram said that tests have been completed on several thousand birds in cooperation with a feed company using all-mash rations either in mash or crumble form.

"These rations have been tested on both heavies and White Leghorn type birds. There has been no difference in rate of lay. The birds on crumbles were heavier and consumed a lot more feed. Feed cost per dozen eggs was much in favor of the mash over the crumbles," he reported.

Poultry Nutrition Research at VPI—Dr. C. E. Holmes and Dr. E. L. Wisman of VPI: The researchers said chick growth studies indicate that the recommended 90-gm.-per-ton level of arsanilic acid may be too low for certain dietary regimes. With diets containing no animal protein, four times the recommended level was necessary to elicit marked improvements in growth rate and feed efficiency. There appeared to be almost a linear increase in growth rate with increased levels of arsanilic acid up to 360 gm. per ton when 5% fish solubles was included in the diet.

Trials show that hydrolyzed feather meal, poultry by-products meal, poultry blood meal or a combination of the three may be employed in poultry diets to supply up to one sixth the total crude protein.

As a preliminary to future studies, performance of broiler chicks to nine weeks has been studied on six different diets. The diets included a commercial diet, the 1949 VPI diet, the VPI diet and the latter with various changes. The 1949 diet was inadequate for maximum performance. The 1958 and commercial diets performed best. Fish solubles stimulated early growth. Certain feed additives, antibiotic, arsanilic acid, antioxidant, furazolidone and methionine, collectively stimulated growth. Peanut oil meal combined with poultry blood meal was inferior in protein quality to soybean meal. Simple dilution of the starter with corn did not give the most desirable finisher.

The scientists also told of a study of the influence of varying protein and energy contents on hen performance. Protein percentages in the five diets were 15.24, 18.26, 15.21, 18.25 and 18.28, respectively. Calories per pound were 884, 882, 986, 987 and 1131. There were no significant differences in per cent egg production, or in body weight gains, and no material difference in mortality. Diet 5, with the higher protein and energy, showed the best feed efficiency but at a higher feed cost per dozen. Least feed cost per dozen was on Diet 1.

It may be, said the researchers, that birds with higher production potential may respond differently to higher protein and energy diets and to different calorie-protein ratios. At least with birds of average production ability, no improvement in egg production was obtained by raising protein from 15.21 to 18.28% or by increasing energy from 882 to 1131 calories. No great change in production resulted from rather wide changes in C/P ratio.

The researchers also told of a study of the influence of nicarbazin on egg yolk mottling. Levels tested varied from the recommended level in chick diets to as little as one thousandth of the amount used in chick diets. The levels ranged from .0125% down to .0000125%. The group fed the highest concentration of nicarbazin did not differ in yolk score from the other groups until after this diet had been fed more than one week. From then on a marked increase in yolk mottling was observed. Storage at higher temperatures tended to result in more severe mottling. The group fed the next highest concentration (.00625%) did not have appreciable

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mottling until they had been on the diet for more than two weeks. The degree of mottling was less severe than in the first group. The lowest level did not seem to result in any appreciable increase in mottling. Rate of egg production was not affected for the five-week feeding period in the groups fed the three lower levels but was reduced when .0125% (¼ lb. per ton) was fed.

DAIRY SECTION: Dr. G. C. Graf, head of the VPI dairy science department, was moderator of the dairy section session, which included talks on various aspects of dairy feeding.

Results Rather than Appearance in Milking Rations—J. C. Thompson, manager of dairy research, Ralston Purina Co., St. Louis: There are two rules for feeding dairy cows that have not changed for nearly 50 years, Mr. Thompson noted. These are: (1) Feed good quality forage ad libitum. (2) Feed grain according to production. Unfortunately, there is still too much poor quality roughage fed. What changes, if any, should be made in the grain ration when poor quality roughage must be fed? Purina work some time ago clearly indicated that the amount of grain ration should be increased to meet energy requirements, rather than increasing protein level.

Feeding grain to milking cows according to milk produced is basically sound. However, said Mr. Thompson, the statement implies that all grain rations are alike and equal in milk-making power. This is a wide open field that has not been thoroughly explored.

Dairymen traditionally buy or formulate rations by appearance and cost. Too many of us don't ask the cow what she would recommend. Mr. Thompson told of Purina work in which energy values of milking rations have been increased. Results indicate that production can be significantly increased with potentially high producing cows, by formulating grain rations according to responses by the cows themselves rather than by the physical appearance of the mixture.

What Can We Expect from Additives to Milking Rations?—Dr. W. E. Thomas, head, dairy husbandry section, North Carolina State College: Dr. Thomas first listed questions to ask in determining the merit of a new additive.

He said additives currently being sold for dairy cattle generally contain a source of one or more of the following: (1) Amino acids, (2) B-vitamins, (3) trace minerals, (4) extra energy with fat, (5) alcohol, (6) bacterial or bacteria stimulants, (7) antibiotics, (8) hormones, (9) tranquilizers.

Some of Dr. Thomas' reporting and comments on the above follows: (1) and (2) Experiments show amino acids and B-vitamins are synthesized in the rumen. High producing herds shifted to more roughage and less grain and fed this type of additive have had poorer performance. (3) If minerals are not in the ration naturally, they need to be added. Feeds grown on soils containing the minor elements will contain sufficient quantities. Salt as sodium chloride as well as a source of calcium and phos-

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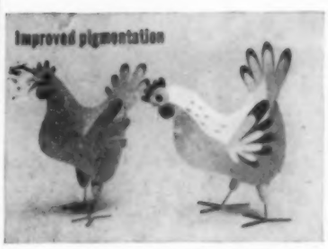

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phorus should be provided free choice. It is questionable if cows should be forced to eat minor elements mixed with minerals consumed in larger quantities. In a recent Arizona test there was no advantage in feeding fortified salt.

(4) Research has not shown extra fat in the diet to increase milk production. (5) North Carolina research with beef cattle on feeding alcohol along with molasses and urea has not shown an increased return. Cornell found no advantage for ethanol over an isocaloric amount of starch for dairy heifers. (6) Most evidence available at this time does not show an advantage in feeding antibiotics. (7) When the entire lactation or lifetime production is considered, there is doubt as to the advisability of feeding thyroprotein. (8) A Michigan report indicated that feeding a tranquilizer to milking cows had no effect on milk or fat production, body weight or feed consumption.

Dairy Cattle Research at VPI—Dr. W. A. Hardison, VPI: Dr. Hardison told of several studies. Among them were these: Work aimed at development of short-cut techniques (employing indicators or marker substances) for measuring forage utilization is continuing. Some time ago a long-term study was initiated on whether dairy animals subjected to a ration containing borderline or low levels of copper can grow, reproduce and produce satisfactorily. To date no differences in milk production or reproductive performance have been noted which could be attributed to copper intake. No clinical symptoms of deficiency have been noted in any animals.

Studies of the minimum protein requirement of the very young calf are under way. In two trials which have been completed, calves were raised from birth to 8 to 12 weeks of age on liquid diets varying from 15.5 to 26% protein (DM basis). In one trial calves were fed diets containing 15.5, 17.1 and 25.7% protein; daily gains to 12 weeks averaged .36, .47 and 1.06 lb., respectively. A second trial compared 25, 20.4 and 26.4% protein. Over eight weeks, daily gains averaged 1.05, .88 and .97 lb., respectively.

Research has been conducted on feeding apple pomace containing DDT. At a level of 10% of the concentrate ration, milk contained .1 to .4 ppm DDT. When pomace made up ¼ to ½ of the concentrate, much higher levels appeared in the milk.

What the Homemaker Wants in Milk and Milk Products—Richard J. Werner, Milk Industry Foundation, Washington: The flavor of milk is the key to its popularity as a food, and one of the factors affecting flavor, of course, is feeding. Feed flavor can be minimized or eliminated by taking cows off feeds which impart certain flavors two to four hours before milking. Certain feeds if fed even 15 to 30 minutes before being milked can be detected in the milk. Feeding after milking is recommended.

BEEF CATTLE AND SHEEP SECTION: W. G. Ritchie of Petersburg, Va., presided at this session. Among the topics were nutrition and stress, recent research findings and training of nutritionists. John A. Christian of North Carolina State College first told what the housewife wants in beef in the way of grades, price, cuts, tenderness, etc. The producer, he said, should produce meat-type beef and lower production costs. And the help of the feed man is needed.

Nutrition and Stress in Livestock—Dr. C. K. Whitehair, Michigan State University: It is obvious, said Dr. Whitehair, that stress applies to a wide variety of conditions. At times, however, the term has been rather loosely applied. While there is a condition of stress and the details are fairly worked out, one might wonder if we are using the term as a catch-all for all sorts of disorders. Nutrition and disease research has made much progress, and most disorders, whether of nutritional or infectious origin, can be recognized and treated specifically.

Effects of most feed medicaments have been attributed to controlling "stress" under certain conditions. Actually, said Dr. Whitehair, most of the growth-promoting effect has been the control of specific pathogenic agents.

Nutrition and infections are interrelated. Nutritive requirements under conditions of stress will vary depending on type and duration of stress and the accompanying physiological, biochemical and pathologi-

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cal disturbances. Under field conditions of stress, two things must be considered: (1) removal or elimination of the stress factor, whether an infectious agent or management condition, (2) a program of nutrition to get animals back into efficient production.

As additional information is accumulated, the bridge between the areas of nutrition and stress and diseases will be more firmly established.

Beef Cattle and Sheep Nutrition Research at VPI—Dr. J. P. Fontenot of VPI: Dr. Fontenot reported on several experiments. Among them were these:

Work has been conducted on the effect of implanting different levels of stilbestrol in heavy grazing steers. Levels implanted at the beginning of the season were: (1) None; Lot 2, 12 mg.; Lot 3, 24 mg.; Lot 4, 36 mg.; Lot 5, 48 mg. Average daily gains in the 150-day experiment were 1.25, 1.50, 1.58, 1.52 and 1.50 lb., respectively. Carcass grades on the basis of 7 for average standard, 8 for high standard and 9 for low good were 8.4, 8.4, 7.8, 7.4 and 7.1. Dressing percentages also were higher for Lots 1 and 2.

A trial was conducted to study the effect of feeding stilbestrol and chlortetracycline alone and in combination to fattening feeder lambs in an 83-day test. Rations were: Lot 1, basal (1:1 ratio of ground alfalfa and ground shelled corn); Lot 2, basal plus Aureomycin; Lot 3, basal plus stilbestrol; Lot 4, basal plus Aureomycin and stilbestrol; Lot 5, pelleted basal; Lot 6, ground corn and long alfalfa hay (1:1 ratio); Lot 7, pelleted corn and long alfalfa hay (1:1 ratio); Lot 8, pelleted corn and long alfalfa hay (each full-fed); Lot 9, ground corn and pelleted alfalfa hay (1:1 ratio). In addition, all lambs were fed .1 lb. soybean meal per day. The stilbestrol level was 2 mg. per head per day, and the Aureomycin was fed at a rate of 10 mg. per pound of ration.

Average daily gains were (1) .348, (2) .319, (3) .366, (4) .359, (5) .357, (6) .278, (7) .270, (8) .319, (9) .375. Feed per unit of gain was least for Lots 3, 8, 9, and 5 in that order. Cases of rumen parakeratosis were greater for Lots 5, 9 and 8 in that order. Carcass grades were lowest for Lots 6, 7 and 8.

Training Nutritionists—Dr. R. W. Engel, head of the VPI biochemistry and nutrition department: Dr. Engel noted that the average basic research effort in all experiment stations is 22.3% of the total. In some stations, 30% or more is basic. In Virginia, 17.5% is basic. It is the recognition that VPI was lagging in basic research effort which prompted efforts to develop a program of graduate training during the past six years. Graduate students, Dr. Engel pointed out, represent the only available future source for replenishing special skills needed in colleges, schools, private laboratories and industry.

At present, staff members and graduate students are engaged in a number of research projects which may not have immediate practical application but which stimulate graduate students so that the search for new knowledge will not diminish. At the same time, a good deal of applied research continues.

Dr. Engel listed some of the problems under investigation. Among them were these:

Reversal of sulfaguanidine toxicity in the rat by feeding meat meal; the active factor in meat meal which reverses growth depression caused by feeding sulfaguanidine may turn out be one of the yet undiscovered vitamins that may be important ingredients in feeds 10 years from now.

Isolation and characterization of rumen microorganisms that digest protein.

Identification of a growth-stimulating substance in rumen contents.

Determination of the extent to which ammonia or non-protein nitrogen spares amino acids.

Toxicity of molybdenum and how other minerals influence molybdenum toxicity.

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TOLEDO, IOWA—A new corporation has been formed here, and it has purchased the Lewers Grain Co. from Charles Lewers. The firm will do business under the name of Tama County Grain Co.

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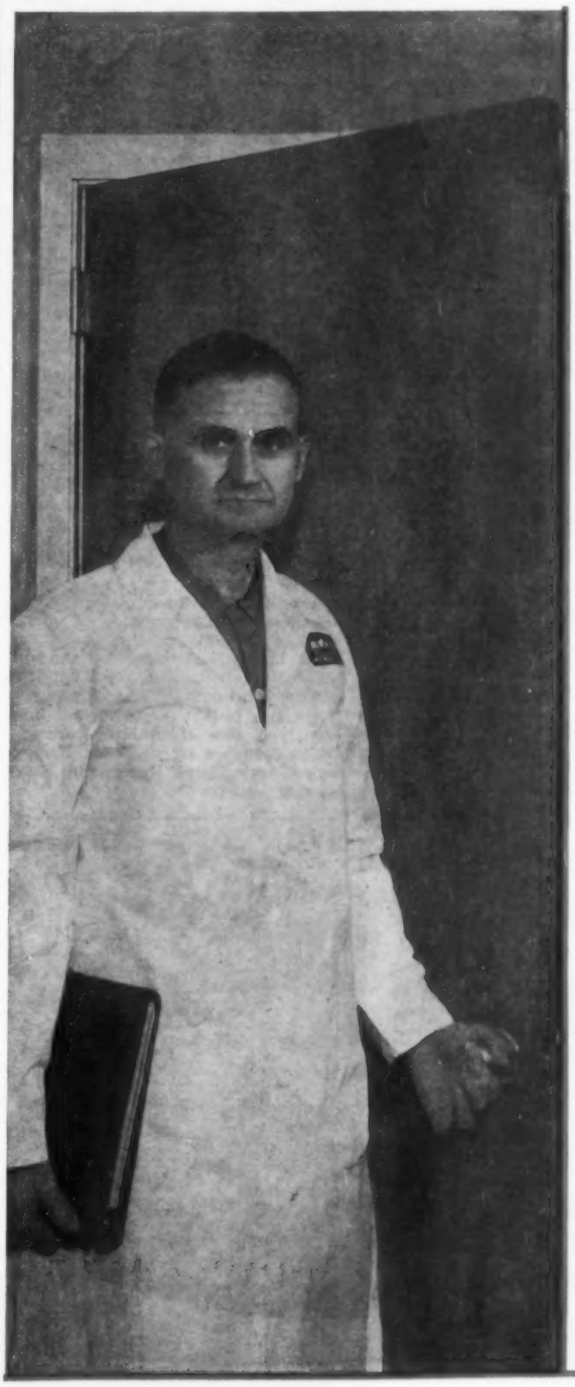

OPENING A NEW DOOR IN BROILER GENETICS

to keep Arbor Acres females FIRST in the industry

Dr. Connally O. Briles is opening the door to the new blood-typing laboratory at Arbor Acres. More important, this nationally-known scientist is opening a new vein of information for the Arbor Acres female breeding program, already the largest in the broiler industry.

As an aid to poultry breeding, blood-typing has most often been associated with the effort to learn more about the factors which are low in heritability. It is, however, possible that this new technique will also lead to new discoveries about the highly-heritable factor of the growth rate of progeny. So Dr. Briles and his Staff are working both sides of the street. What they learn may help Arbor Acres' famous team of geneticists to develop new and better methods of selection, to produce an even better broiler female.

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Industry Song Introduced

KANSAS CITY—Who says there's no romance in the feed business? The industry even has a ballad. The song, "There's No Business Like Feed Business" (with apologies to Irving Berlin) was introduced to the Midwest Feed Manufacturers Assn. at its convention here recently by the K-State Singers, a Kansas State College choral group directed by William R. Fischer, who wrote the words. Here's how the tune goes:

There's no business like feed business
Like no business I know.
Everything about it is appealing,
Even though your sales begin to sag,
Nowhere can you get that special feeling
Like when you're selling the millionth bag.

There's no people like feed people
We need people like them.
Yesterday their sales might have been quite bad
Do they worry and act real sad?
Tomorrow they will crack the whip and sell like mad—
Let's go—we need the dough!

There's no business like feed business
The feed business is great.
Yesterday this industry was very small
Today it's growing up strong and tall.
Someday soon it's really gonna top 'em all
And though we never brag
It's all in the bag!
Repeat: There's no people like, etc.

Restricted Feeding Of Pullets Cited

DURHAM, N.H.—The outstanding advantage of restricted feeding of growing pullets is the saving of money by saving feed, according to a University of New Hampshire poultry feeding scientist who has just completed six years of investigations on the feeding program. Dr. Richard C. Ringrose said good management and sound judgment are vital factors in the successful operation of restricted feeding.

For best results he found that such feeding should be started when the pullets are 6-8 weeks old. The feed should be restricted 20% on a poundage basis, he said.

His bulletin, "Restricted Feeding of Growing Pullets" offers a simple feeding guide for both the heavy and light breeds, indicating the amount of feed to be used daily per 100 birds. Copies will be mailed free on request from the poultry department, University of New Hampshire, Durham. It is published by the New Hampshire Agricultural Experiment Station as bulletin 456.

'Corn Crisped Chicken' Promotion Announced

RICHMOND, VA.—The National Broiler Council has announced the advertising and merchandising schedule behind its new promotion, "Corn Crisped Chicken."

A nationwide television, magazine, radio and newspaper advertising campaign will promote the new recipe idea March 1-April 15. In addition, "Corn Crisped Chicken" will be backed by 3,750,000 recipe leaflets to be distributed through super markets, and the recipe will be printed on the side panel of Kellogg Corn Flake Crumbs and Kellogg Corn Flakes.

Four partners in the promotion are the Kellogg Co., Reynolds Metals Co., Pet Milk Co. and the Broiler Council.

Simplicity of preparation with no added fat or grease is the idea behind the recipe. The recipe calls for dipping the chicken in Pet Milk, rolling it in Kellogg Corn Flake Crumbs, placing it in a shallow pan lined with Reynolds Wrap and baking for an hour at 350°.

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Ideal for granaries, as shown, indoor elevator systems. PTO or motor drive. Permits unloading wagon into hopper and augering grain vertically into HARVESTORES, SILOS OR BINS. Hopper above ground or in a pit installation.

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Independently regulated flow of each of three compartments in box gives ideal blend of concentrate and grains. Operator controls mixing, discharge auger clutch, rear safety engine switch, rear bumper, and throttle, all from rear of box. Stock 4 and 6 ton capacity or custom box to fit truck frame. A complete job, mounted on your truck, ready to operate

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A career poultryman, college professor, author and editor, Dr. Heuser has been widely acclaimed for his work, his research, and contributions to advances in poultry science.

Dr. Heuser was the third person in the U.S. to receive a Ph.D. in Poultry Science (Cornell, 1918), and for 35 years was Professor of Poultry Husbandry at Cornell University. He is a former editor of both Poultry Science and World Poultry Science Journal.

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Have You Been Asking These Questions About Granite Grit ?

Question: **What is the chief function of grit?**

Dr. Heuser: The chief function of grit is to pulverize feed and other materials which the bird eats. This is done in the gizzard. It is especially important that feeds and materials of vegetable nature—grains and their by-products and grasses—be broken down since the valuable nutrients are locked in with fiber or cellulose coatings which are not digested by enzymes and which must be broken down mechanically.

Feeds of animal origin can be acted upon directly chemically.

Question: **Does that mean that the birds receiving all mash rations do not need grit?**

Dr. Heuser: Not at all. It is true that feed efficiency is greater when whole grain is fed, but even all mash rations as fed are not fine enough to get the most nourishment out of the particles. Grit thus helps to reduce the feed bill.

Another important reason for feeding grit is the grinding of such materials as litter, feathers, dried grass, and other bulky or fibrous substances which the birds consume. These must be reduced so that they will pass through the digestive tract and not cause hindrance to the digestive processes or even impaction.

Question: **Can any kind of grinding agent be used as grit?**

Dr. Heuser: Any material will have some grinding action, but harder substances, such as insoluble gray granite grit with black specks of mica, are more efficient and last longer.

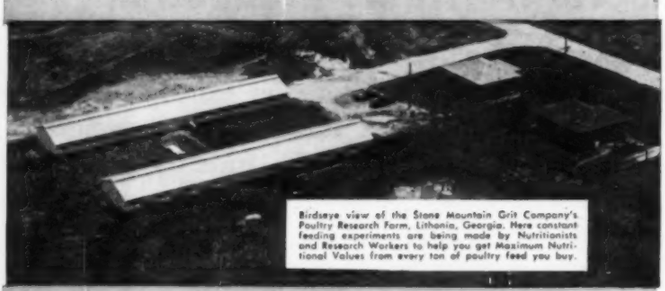
Question: **What effect does the feeding of grit have upon the gizzard development?**

Dr. Heuser: A number of reports as well as observation indicate that birds receiving grit have larger gizzards—sometimes as much as 50% larger—which have firmer muscles and are generally more healthy looking. The no-grit gizzard muscles are flabby and have a dull color. The linings of the grit-fed gizzards have been reported to be thicker, tougher and free from gizzard erosion.

Question: **Suppose, Dr. Heuser, that a bird did eat too much grit, will an excess amount of grit do any harm?**

Dr. Heuser: No. Excesses will be very quickly passed from the gizzard and excreted.

Do you have a question regarding the feeding of granite grit? If you do, please address it to Dr. G. F. Heuser, c/o Stonemo Poultry Research Farm, Lithonia, Georgia.



Birdseye view of the Stone Mountain Grit Company's Poultry Research Farm, Lithonia, Georgia. Here constant feeding experiments are being made by Nutritionists and Research Workers to help you get Maximum Nutritional Values from every ton of poultry feed you buy.

STONEMO GRANITE GRIT—*The Grit with the* "EXTRA GRINDING SURFACES"

E. L. McCarthy

CHIEF ENGINEER—E. L. McCarthy has joined Right Sales Co., Kansas City, as chief engineer, it was announced by Robert R. Smith, vice president of the company. Mr. McCarthy will be in charge of the engineering and plans section, and will supervise construction of American Steel Buildings and Black, Sivalls and Bryson Steel Bins, which the company distributes. He will also be responsible for engineering on the bulk feed equipment, grain conveying equipment, aeration and temperature systems also distributed by the company. Mr. McCarthy formerly worked for Bartlett & Co.; Butler Manufacturing Co., where he developed bolted steel tank elevators, and Horner & Wyatt, designer and builder of concrete elevators.

Broiler Council Issues Merchandising Manual

RICHMOND, VA. — "Profitable Chicken Merchandising Ideas" is a new, 76-page retail manual published recently by the National Broiler Council.

In announcing the manual, the NBC said the book was issued "as a means of helping food store operators to take stock of their chicken merchandising methods in order to derive maximum benefit from them." The book contains more than 150 photographs showing how to merchandise, cut, wrap and display broiler-fryers.

The manual is divided into five major sections: Chickens Make Money —Here's Why; Chickens Make Money —Here's How; Displaying Chicken; Self Service Ideas With Chicken; Frozen Chicken.

A series of processor meetings in major production areas is now being held by the author, Clifford G. Bowes, to discuss ways processors can use the information in the book most effectively.

Rebuilding Underway For Iowa Feed Plant

ST. ANSGAR, IOWA — Claire Brasch, manager of the St. Ansgar Grain & Feed Co. plant, which was destroyed in a $75,000 fire, has announced that work will begin on a new modern elevator this spring.

The elevator is now back in business on a temporary basis, with the building adjacent to the former elevator structure used as office space. According to incomplete plans the new building will incorporate latest features of feed and mill construction.

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FEED MIXER, 1-TON CAPACITY, guaranteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

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10x42 Nordyke double roller mill, B drive. Silent roller chain differential V-belt drive.
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Two-ton Kelly Duplex Vertical mixer with 10 H.P. motor.
Hammer mills, 12", 16", 20"—40 H.P. to 100 H.P.

MACHINERY BEING DISMANTLED FROM "BIG FOUR FEED MILL"
F.o.b. Ludlow, Kentucky

24" O. B. Wise Hammermill, DC to 60 H.P. motor with 220-volt compensator; 21" O. B. Wise Hammermill, belt driven with 220-volt compensator, 50 H.P. motor; 21" O. B. Wise Hammermill for direct connection 50 H.P. motor, no motor; 18" Forster Feed Grinder, DC to 50 H.P., 3,520 R.P.M. motor; 100 H.P. G.E. Induction Motor, 900 R.P.M. with controls, 220-volt; Union Special Bag Closer, 80600E; Union Special Bag Closer 80600E with 8" belt, portable; Richardson Portable Sacking Scale; three Richardson Bulk Feed Sacking Scales; two Fairbanks Platform Scales; 5 bu. Richardson Receiving Scale; five elevators with 6x4 cups, approx. 60' centers; elevator 9x5 cups, 100' centers; elevator 10x6 cups, 40' centers; 36 W. J. Savage Feeders 6" to 16"; three Strong-Scott Molasses Pumps; Hammond Screwlift, like new, 22' lift with 24" Feeder Screw and 5 H.P. TEFC motor and drive; J & N Pellet Mill complete with 20 H.P. motor, drive and 220 compensator, like new; Single Webster Power Shovel; several motors; switches; line shafting pulleys and bearings; metal hoppers and spouting; corn scourer.

GENERAL MILL EQUIPMENT CO.
Box 204 Kansas City, Mo.

FOR SALE

2-16x40 Aristocrat Gruendler Grinders with 75 h.p., 220/440 volt, 3 Phase, 60 Cycle, Type K, Frame 445S, G.E. Motors.

Complete with bases—feeder—fans—cyclones—440 Volt. Automatic reduced Voltage Starting Compensators.

LIKE NEW CONDITION
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Scottdale, Pa.
Box 45 TUrner 7-8370

MACHINERY FOR SALE

60 H.P. NO. 4 FORSTER DIRECT CONnected hammermill. Complete with TEFC motor. Bargain. Combs and Co., 2841 Southwest Blvd., Kansas City 8, Mo.; Logan 1-7843.

CALIFORNIA OLD-STYLE, 50 H.P. heavy duty, pellet mill, with TEFC motor and starter. Bargain. Combs and Co., 2841 Southwest Blvd., Kansas City 8, Mo.; Logan 1-7843.

USED BULK FEED BODIES READY FOR delivery, all in excellent mechanical condition. Highway, Dodgen, Baughman and Dorsey, mechanical and hydraulic. Capitol Trailer and Body, Inc., 419 Dory St., Jackson, Miss.; Phone Fleetwood 5-3251.

20" STRONG-SCOTT ATTRITION MILL with two 40 H.P. motors, complete with 220-V. controls—15 H.P. blower unit and collectors. Excellent condition, $1,800. Quad States Equipment Co., P. O. Box 2503, South Des Moines 15, Iowa.

SALE — ALUMINUM TANK, 4,000 GAL. Dewatering presses: Davenport No. 1A, No. 2A, No. 3A; Louisville 8-roll 36"; six Louisville Rotary Steam Tube Dryers 6'x50', 6'x30', 6'x25'; screw conveyor, trough belt conveyor, bucket elevator, bins, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

ALFALFA DEHYDRATING PLANT, MODel SD 825 Heil drum unit, complete, $11,850; model A 1025 self feeder, $3,500. Both like new condition. Heil 20-40 hammermill, used, $500. Fox Field Harvester, used one month, $1,750. W. A. Caplis, Box 1312, Shreveport, La.; Ph. 25312, nights.

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

WILL BUY FOR CASH USED MOBILE mill or stationary "package" unit. Quote price and furnish complete details. A. T. Myren, Box 55, Springfield, Ill.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. B. Hagan Mill Machinery, Jefferson City, Mo.

HELP WANTED

EXCELLENT SIDE-LINE OR FULL TIME item for salesman selling to feed, grain, farm equipment dealers and farmers. Liberal commissions. Replies will be held confidential. Write Doane Agricultural Service, Inc., St. Louis 3, Mo.

EXCELLENT SIDE OR FULL TIME ITEMS for salesmen now calling on feed, grain and flour mill trade. Pennsylvania, Ohio and West Virginia. Top commissions. Replies will be held confidential. Reply to E. H. Beer & Co., Inc., Ibsen Ave. and Newkirk St., Baltimore 24, Md.

EXPERIENCED FEED SALESMAN WANTed for proven area central Illinois. We have a man retiring and need a replacement. The territory is well established and company well known. Earnings are excellent. Address Ad No. 4451, Feedstuffs, Minneapolis 40, Minn.

FEED SUPPLEMENT MANUFACTURER has opening for aggressive sales representative. Location west central states. Must know formulation and nutrition. Degree required. Salary plus commission, plus expense, plus liberal benefits. Send resume to Ad No. 4581, Feedstuffs, Room 3214, 551 Fifth Ave., New York 17, N. Y.

YOUNG D.V.M. TO DIRECT RESEARCH and technical service for small but fast growing Midwest pharmaceutical firm. Good starting salary, congenial people and an opportunity to grow with the company. Address Ad No. 4601, Feedstuffs, 2832 Board of Trade Bldg., 141 West Jackson Blvd., Chicago 4, Ill.

CHECK FEEDSTUFFS WANT ADS!!

HELP WANTED

MILLING EQUIPMENT SALESMAN—EXperienced sales engineer for large Southwest equipment manufacturer, specializing feed and processing plants. Top territory, salary and commission, possible interest for right man. Excellent opportunity. Our employees know of this ad. Address Ad No. 4559, Feedstuffs, Minneapolis 40, Minn.

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NATIONAL SUPPLIER TO FEED MANUfacturer offers excellent opportunity to aggressive sales representative. Salary, commission, expenses, liberal benefits. Travel. Degree, knowledge of formulation and nutrition necessary. Location, North Central states. Send complete resume to the Borden Co., Feed Supplements Department, 350 Madison Ave., New York 17, N. Y.

WANTED—FEED SALES AND PROMOtion manager. We can offer you one of the best paying jobs in the feed industry, if you can set up a dealer and direct farm sales organization. You need imagination, promotion ideas and be willing to roll up your sleeves and work. We are a Midwest manufacturer, have been in business a long time and have shown a steady growth. Don't apply if you are over 45, a job switcher or ever been fired. Send qualifications for personal interview. Information will be kept confidential. Our men know of this ad. Address Ad No. 4605, Feedstuffs, Minneapolis 40, Minn.

LIVESTOCK SPECIALIST — WE WANT this man to approach being an expert, but not being so much of an expert that he has never learned—or has forgotten—how to sell livestock feed. His specialty needs to be in beef cattle and swine feeds. He will be responsible for the sale of these two types of livestock feed. He will also be responsible for developing beef feeding yards. He is a college graduate with an animal husbandry major. He should have definite recent experience in wholesale selling of feeds with particular emphasis on beef cattle and swine feeds. Along with having a good sales personality he needs also to be a good public speaker. Age 30 to 40. We are not a new company; we are not an old company. We're dry behind the ears, we have our feet on the ground. He know where we have been—where we are—and where we're going. We want the right man to come along with us—not for a ride, but to assist in good progressive pushing. For his pushing part time and his steering part time there is excellent career remuneration in the form of a good salary, recognition, and excellent employee benefits. No one has gotten fired. This is a newly created position due to a sound program justifying considerable expansion. What experience do you have relevant to these requirements? Also state age, education, personal data, and salary. Address Ad No. 4502, Feedstuffs, Minneapolis 40, Minn.

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FOR SALE—SMALL FLOUR MILL. NO competition. Plenty of grain, water power. A. S. Lyon, Burlington, W. Va.

FOR SALE — RETAIL FEED BUSINESS in south central Wisconsin. Address Ad No. 4524, Feedstuffs, Minneapolis 40, Minn.

FOR SALE BY OWNER—GOING FEED store with portable feed unit and pickup truck. Address Ad No. 4567, Feedstuffs, Minneapolis 40, Minn.

WANT TO BUY RETAIL FEED, FARM supply business. Town 5,000 or more, southern Wisconsin, southern Minnesota or northern Illinois. Address Ad No. 4575, Feedstuffs, Minneapolis 40, Minn.

FOR SALE — FEED MANUFACTURING plant fully equipped. Pellet mills, mixers, etc. Located in Sioux City. Priced for quick sale. Terms. P. O. Box 1251, Sioux City, Iowa.

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SALES ENGINEER, SOUTHEASTERN states, 12 years. Experience in sales, production, designing, and installation of equipment. Address Ad No. 4532, Feedstuffs, Minneapolis 40, Minn.

NUTRITIONIST — Ph.D. TWO YEARS' commercial experience in feed formulation and research. Desires position with feed company or allied trades. Married. Age 28. Address Ad No. 4608, Feedstuffs, Minneapolis 40, Minn.

SERVICE AND MANAGEMENT SUPERvisor presently with a large fully integrated turkey layer and broiler project wishing change in position for good reason. Complete resume. Address Ad No. 4610, Feedstuffs, Minneapolis 40, Minn.

GENERAL MANAGER—NOW MANAGING growing profitable multi-plant, feed and soy operation in Midwest desires change. 20 years' experience in all phases of feed and soy business. Address Ad No. 4611, Feedstuffs, Minneapolis 40, Minn.

MARKETING MANAGER DESIRES LOcation with progressive company. Age 39. Family man, college. Eleven years with one employer included market research, subsidiary management and subsidiary supervision. Address Ad No. 4586, Feedstuffs, Minneapolis 40, Minn.

MISCELLANEOUS

KOENIG NUTRITION CALCULATOR CApable of calculating 10 feed nutrients simultaneously. This ingenious electric machine is complete with 50 adjustable frames and 24 fixed frames. Includes specially designed rack for 78 frames. Excellent condition. Attractive price. Address Ad No. 4613, Feedstuffs, Minneapolis 40, Minn.

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Brokerage Items for LA. MISS. ALA.
Feed Ingredients Specialties
Address Ad No. 4580, Feedstuffs Minneapolis 40, Minn.

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Let Ross, Inc., handle sale of your milling equipment and properties large or small anywhere. Largest machinery dealer in the U. S. on feed, flour, corn and processing equipment. No auctions, will sell or purchase, immediate personal appraisal, highest prices. Complete plants, many items needed now. Over 2,000 items in stock. If it's mill machinery Call — Write

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125 H.P. open bbrg. motor (new)	1,400.00
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One of America's leading manufacturers of portable feed mills is interested in opening new territories. Will finance purchase of mills by your feed dealers under exclusive franchise plan.

You provide no capital, but substantially increase your feed sales by making it possible for your dealers to purchase portable milling equipment.

This plan is available only to reputable feed manufacturers who have a minimum of 50 dealers. Send inquiries to Ad No. 4586, Feedstuffs, Minneapolis 40, Minn.

Feed Control Comment

By BRUCE POUNDSTONE

Secretary, Association of American Feed Control Officials

Kentucky Agricultural Experiment Station, Lexington

EDITOR'S NOTE: Mr. Poundstone will be happy to answer any questions relative to feed control. Feed men who have questions should send them to: Feed Control Comment, Feedstuffs, P.O. Box 67, Minneapolis 40, Minn., and they will be passed on to Mr. Poundstone.

FAT DEFINITIONS recognizing five fat products are now in use for the first time. Industry representatives and Paul Curtis of Indiana, investigator for fats and oils, developed these last year. They were adopted at the October, 1958, meeting and are published beginning on page 41 of the 1959 annual publication of the Association of American Feed Control Officials.

These divide fats into classes and distinguish them according to processing procedures as: Animal Fat; Vegetable Fat (or oil); Hydrolized Fat or Oil (feed grade); Methyl, Ethyl or other non-glyceride ester of animal or vegetable fatty acids (feed grade), and Fat Product (feed grade).

Use of the term "feed grade" is added where necessary to show that the product has been adequately tested to prove its safety for feeding purposes. The term "feed grade" appearing in the name when sold as an ingredient to manufacturers need not be shown in an ingredient list of a mixed feed. Two or more fat derivatives may be combined and would be shown by listing each component, as for example, "Animal Fat and Hydrolized Vegetable Oil."

The word "Esther" should be spelled "Ester" in the first and third line of T-9 on page 41 of the 1959 publication. Also, the word "fat" in the name of T-10 is incorrectly shown as "fatty." These corrections should be made in your copy of the handbook.

●

FLAVOR IN FEEDS should be indicated as "natural flavors added" or "artificial flavors added" or "natural and artificial flavors added." Such a designation will be acceptable to most, if not all, states and to the Food and Drug Administration. A flavor may represent a mixture of several components.

Any company interested in using flavors in mixed feeds will want to consider the research data available to date on this subject and follow the feeding trials underway. Cornell University, to mention one, is carrying on studies of this type. A preliminary statement covering their results was reported in the "Cornell Feed Service," No. 51, entitled "Studies on the Sense of Taste in Animals," by M. R. Kare.

●

GRAIN TREATED FOR SEED USE occasionally finds its way into feed channels. This is particularly true of seed corn. Some may have the mistaken impression that some of the treatments used are not harmful and treated seed can be safely fed.

Sale of treated seed for any purpose other than seed is a violation of most seed laws. Further, there is no way treated seed corn can be used in feeds and sold legally without declaration of the seed treatment. Generally such treatments are harmful. There is no middle ground here. Treated seed is out as far as use in mixed feed is concerned.

●

QUALIFYING TERMS IN DESCRIBING INGREDIENTS are often used in connection with their labeling when sold as ingredients. Feed ingredients do vary in quality as for example soybean oil meal, cottonseed meal and other oil meals. These are sold on the basis of protein content. Other terms used include "feed grade," "pure," "fresh," etc.

In listing the names of such ingredients in the ingredient list of a mixed feed the "qualifying" statements are not shown. Thus, cottonseed meal sold as "prime quality 41% protein cottonseed meal" would be listed on the tag of a mixed feed as "cottonseed meal."

These terms and others like them are not shown in an ingredient list. It is assumed that every ingredient used is suitable for feeding, thus pure, fresh, etc. In rare exceptions some qualification may be desirable, such as "fresh" or "green" bones in a dog food, but this is the exception.

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A and D VITAMIN OIL
NEWFIELD NEW JERSEY
"PRODUCTS OF PROGRESS"

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PAXCO DEHYDRATED CORN COB MEAL is the best, most economical roughage carrier for molasses in cattle feed, whether for beef or dairy cattle. Write today to:
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Save on handling costs with Burrows Model 1200 Scale. Built-in Fairbanks Morse scale weighs down to the ounce. Rugged, practical. Rubber wheels and roller bearing casters. Capacity 1,000 lbs. Order yours by collect wire today.
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He's looking for some of your dog food made with our complete dog food cereals

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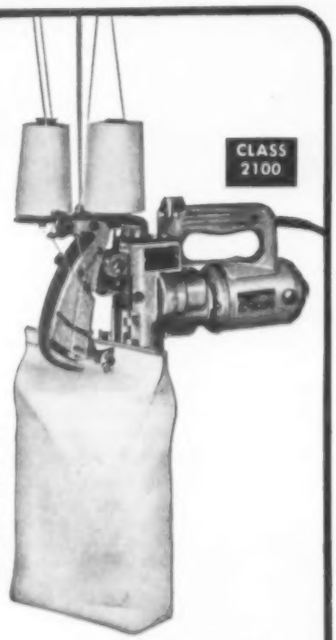
NEW! Portable Electric Bag Closing Machine
CLASS 2100



HERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

- **LIGHTWEIGHT**—9½ pounds. Carry it anywhere. No installation; requires only an electrical outlet.
- **POWERFUL**—Exclusive top and bottom feed for greater power and production. Direct drive motor with thumb control button.
- **VERSATILE**—Closes bags made of cotton, burlap, jute, multiwall paper, laminated paper. Produces two-thread stitch Type 401, or can be furnished to produce single-thread chain stitch Type 101.
- **SAFE**—Anyone can operate it. No special training required. Can be obtained with overhead suspension. Also, can be supplied with pedestal bracket. Send for descriptive literature.

Union Special® MACHINE COMPANY
Originator of Filled Bag Closing Machines
413 North Franklin Street Chicago 10, Illinois

Camera Views of the News

MEMORIAL SCHOLARSHIP HOUSE—The Kansas State College Endowment Assn. has announced purchase of this building, now occupied by Kappa Sigma fraternity, for use as the new Oscar Straube Memorial Scholarship house for men at the college. The scholarship house will provide accommodations for about 50. Plans for establishing the memorial to Mr. Straube of Kansas City, a leader in the feed industry, were announced recently at a Midwest Feed Manufacturers Assn. meeting (Feedstuffs, Feb. 21). Following the death of Mr. Straube Nov. 12, feed men named a special committee to plan a suitable memorial.

CONGRATULATIONS—Vernon Hembree (center) is congratulated on the successful grand opening of his new Feeder's Supply Co. Mill at Logotee, Ind., by Guy Beatty (left) regional sales manager for Tuxedo Feeds, and by Parke Flick, Tuxedo sales representative for southern Indiana. The new mill, employing six men on the floor and one full-time salesman, features a 500-ton capacity warehouse; has a hammermill with automatic screen changers; one 4-ton and one 2-ton mixers; a molasses blender; a sheller with a rated capacity of 500 bu. per hour; two drags and dumps, and a truck hoist working in conjunction with a large capacity motor truck scale. A 1,500-bu. per hour elevator leg delivers grain to a 10,000-bu. grain storage facility for which further expansion is planned. Tuxedo Feeds are manufactured by the Early & Daniel Co., Cincinnati.

MONTANA CONFERENCE—These photos were taken at the recent Montana Nutrition Conference at Montana State College, Bozeman. In the first photo, Dr. O. O. Thomas (left) of Montana State, the conference chairman, is conferring with Robert Wetherell, Montana feed control official and one of the conference speakers. In the second photo, left to right, are: Maynard (Sparky) Johnson, Belgrade (Mont.) Alfalfa Mills; Dr. Rodney Briggs, University of Minnesota, St. Paul, and Dr. Laurent Michaud, Merck Sharp & Dohme, Rahway, N.J. Dr. Briggs and Dr. Michaud were among the guest speakers at the conference.

POULTRY SCIENTISTS—Progeny records system is explained by Dr. John F. Grimes (left), director of research for Nichols, Inc., to a group of poultry scientists attending the University of New Hampshire's recent Poultry Health Conference in Durham. The panel of speakers was shown through the breeding firm's administration building executive offices in Exeter. The scientists are (left to right): Dr. Fred Allen, director of New Hampshire's pullorum testing program; Dr. William Reid, University of Georgia; Dr. F. V. Washko, Merck & Co.; Dr. T. A. Hymas, Dow Chemical Co., and Jerry Beckman and Andre Langlois, graduate students, University of New Hampshire.

PLANT TOUR—Customers of the newly-organized Riverside Molasses Co., Cincinnati, are shown inspecting plant and storage facilities at the company's Riverside terminal. John F. Young (extreme left), company treasurer, and R. C. Lindsey (pointing to gauge), president, conducted the tour. Later, a cocktail party and dinner were given at the Terrace-Hilton Hotel, Cincinnati, for dealers and their wives. During the tour, company officials explained that cane molasses from Cuba is unloaded from Ohio River tankers at the terminal's own dock and pumped direct from barge to storage tanks in the plant for distribution by truck to Riverside's dealers in Ohio, Indiana, Michigan and Kentucky.

A BIRD IN THE HAND—Dr. Walter Glista, director of research, Wirthmore Feeds, Inc., explains results of a current experimental poultry feeding test at a sales and service school held recently for the company's central region supervisors at Wirthmore's home office and research center, Waltham, Mass. Watching are (from left): Carl E. Abrahamson, in charge of the training session; Lewis E. Whitaker, Olean, N.Y., and Ralph E. Dower, Toledo, Ohio, division sales manager. During the week-long course, members of such other departments as advertising, manufacturing, bulk service, traffic and credit explained various functions of their work in relation to sales.

OHIO

(Continued from page 1)

change; Mr. Forrester; and R. E. Troup, Pleasantville (Ohio) Mill Co. Retiring trustees are: Mr. Koppenhafer; Ned M. Fry, Delphos, and S. E. Salisbury, Fostoria.

Mr. O'Brien reported a registration in excess of 1,000 delegates, guests and ladies, for one of the largest attendances among state associations.

The Columbus Feed Club was host to ladies in attendance and provided a bus trip to Lockbourne Air Base, with luncheon at the base.

Seedburo Equipment Co., Chicago, sponsored the showing of three U.S. Department of Agriculture films on grain inspection methods for wheat, corn and soybeans at the beginning of each business session.

A well-balanced program of outstanding topics and speakers brought delegates up to date on such subjects as Washington developments, grain surplus problems, grain bank operations, bulk feed handling methods, drugs in feeds, veterinarian-feedman relationships and others. (A summary of the discussions will appear in Feedstuffs next week.)

POULTRY

(Continued from page 1)

meeting attended by Dr. Baker, who has agreed to serve as a fifth member of the committee. He is considered one of the nation's leading poultry economists and has served on the staffs of the USDA, Ohio State University, Iowa State College and Texas A&M College, in addition to Pennsylvania State.

Organization of the Poultry Survey Committee was spearheaded by the American Feed Manufacturers Assn., Inc., and is co-sponsored by: AFMA, American Poultry and Hatchery Federation, National Broiler Council, National Turkey Federation and Poultry and Egg National Board.

The Poultry Survey Committee's report follows:

EGGS—Egg prices during the next two or three months will likely decline from late February levels. April-June U.S. farm prices will average about 31¢ doz., 5¢ below the same period of 1958. July-September prices will be about 36¢, 2¢ below the same months of last year. Prices during October-December will probably show no improvement over last year's 38¢ average.

Egg production in the first half of 1959 will be about 3% above the same period a year ago. This increase will result from a larger flock and a slight increase in the number of eggs per hen.

Egg supplies in the last quarter of 1959 will be above those of a year earlier. As previously reported, a cut of 10% in the spring hatch would be required to hold October-December egg supplies to year earlier levels because of the record late 1958 hatch, the younger flock and the continued increase in rate of lay.

It is anticipated that the spring hatch will be down 5-8% from a year earlier. This predicted decrease in hatch is greater than the cut of only 1% indicated by the USDA producers' intentions report of Feb. 1. Egg price declines since that date are expected to reduce the number of chicks purchased during the spring hatching season.

Government school lunch purchases of eggs combined with bad weather in the Midwest bolstered winter egg prices above earlier expectations.

TURKEYS—Net returns to producers from the 1959 turkey crop will be about the same or slightly less than last year. Prices during the September-December period are expected to be slightly lower than the 23.5¢ average of 1958. Lower costs for poults and some turkey feeds will partly offset the expected lower turkey prices.

Total pounds of turkey for the holiday marketing period of September through December are expected to be 3-4% larger than in 1958. Farmers reported in January that they expected to raise 5% more turkeys in 1959 than in 1958—3% more heavy breeds and 16% more light breeds. The heavy breeds dominate the holiday supply.

On Jan. 1, there were 14% more heavy breeder hens than a year earlier in the important north central states. Also, current prices for heavy toms are substantially higher than a year ago. Both factors indicate that the expansion in heavy breed production may be greater than indicated in producers' January intentions.

It appears that storage holdings at the beginning of the heavy marketing season will be no larger—and possibly somewhat smaller—than a year ago. Feb. 1 storage stocks were 11% less than the 1958 record for that date.

The holiday demand situation for turkeys is uncertain. There will be more people and increased purchasing power. However, prices will be lower than last year for competing red meats and poultry. Also, it is not known whether the government will again purchase turkeys. Last year, the government purchased 2% of the total production.

BROILERS—U.S. farm broiler prices for April through June will average 16@17¢. This is 3-4¢ below the same quarter of 1958. Market supplies for the quarter are expected to be nearly 15% greater than a year ago.

July through September prices are likely to be about the same as during the April-June quarter. This assumes May-July placements will average 38 million chicks weekly in the 22 reporting states. This rate would be 10% greater than a year ago.

Demand for broilers usually increases seasonally to reach a summer peak. This normally results in increasing prices. Continued expansion in broiler production means that little or no price upswing can be expected this year. Severe competition from red meats is also anticipated.

Breeder hens available indicate a continuation of abundant chick supplies in the second and third quarters. Chick prices will be lower than a year ago, but higher broiler feed prices are expected. Total production costs will be about the same.

ENZYME

(Continued from page 1)

tle need will be presented by Dr. Walter Woods of the beef nutrition research staff at the college. Dr. Charles E. Summers will report results of experiments with complete pelleted cattle-fattening rations containing low-cost roughage.

At the afternoon program in the armory, S. A. Ewing, animal husbandman, will report results of research at the beef nutrition farm on calf production on top-grade Iowa land. This report includes comparison of returns from calves produced in dry lot with those from calves produced on bluegrass pasture and on good grass-legume pasture with and without creep feeding.

Dr. William Burkitt, director of nutrition at the Montana Flour Mills Co., Great Falls, Mont., will talk on "Feeder Calf Production Outside Iowa—Present and Future."

L. N. Hazel, breeding researcher, Dale Hull, agricultural engineer, and William Zmolek, animal husbandman, will take part in a panel on essentials of feeder calf production. The afternoon program will close with a report by Dr. Francis Kutish, agricultural economist, on the cattle outlook.

ELEVATOR INCORPORATED

PIERCE, COLO.—William H. and Fern E. Sharpe and J. Norman and Ruth L. Brown have incorporated Pierce Elevator, Inc.

MEATIER HOG

(Continued from page 1)

yards, livestock cooperatives, hog farms, retail stores and agricultural experiment stations.

Two members of the committee, Mr. Whitten and Alfred E. Santangelo, representative from New York, went to Europe to participate in a meeting of U.S. agricultural attaches and to study the meat-type hog situation, and other agricultural matters, in the four Scandinavian countries—Finland, Sweden, Norway and Denmark—where some of the finest meat-type hogs in the world are produced.

According to the subcommittee's report, the need to produce meatier hogs and to market leaner pork in the U.S. results from several "significant" developments which have taken place in the pork and lard markets since the turn of the century.

Developments Noted

Briefly, these developments are:

(1) Eating habits of most people have changed. Consumers, the subcommittee said, have developed a desire for lean-type meat, with pork consumption per capita declining gradually. Expenditures for pork in the U.S. have dropped from 3.8% of consumer income in the early 1920's to about 2% in 1957.

(2) The value of animal fats has decreased substantially as lard has been supplanted for domestic cooking purposes by vegetable oils. Lard was worth nearly as much as pork early in the century, but it now has only nominal value.

(3) Export markets for U.S. pork and lard have decreased substantially.

The subcommittee's report makes these statements:

"Since the hog is one of the most efficient means of converting feed grain into meat, the falling of pork and lard consumption has reduced the market for feed grain. This has contributed to a serious imbalance in U.S. agriculture. One result is that grain that should be going to market in the form of meat, particularly pork, is moving into warehouses. This is adding to our surplus problems and increasing the cost of storing and handling these commodities."

The subcommittee said three things stood out in all of its studies concerning the U.S. swine industry:

"**FIRST**, and most important, is an urgent need to establish greater monetary inducements at the market place to encourage production of higher quality hogs. Lack of grading, large corn surpluses, and payment based on per pound average for all hogs in a lot, all constitute an incentive for production of fat hogs. This has failed to reflect the true value of the lean pork produced from so-called meat-type hogs. Grading systems and premiums and discounts found in other countries appear to provide an incentive to the producer of high quality hogs and protect him against producers of undesirable types.

"**SECOND**, there is a need to provide the producer with information showing the grade and value of his hogs marketed. Lack of such information is a serious handicap to the farmer in improving breeding, feeding and management practices. Also, more attention must be paid to the need to inform processors and consumers as to the true value of the meat-type hog and lean pork in the market place.

"**THIRD**, retail cuts of pork must either be standardized or identified and packaged in such a manner as to clearly make the quality known to the purchaser. Grading and identification have been highly successful for beef, lamb, veal and poultry."

It is the subcommittee's opinion that as long as the producer can continue to receive payment on an average price for ungraded hogs there will continue to be the temptation to feed surplus corn and other feed grains beyond the proper market weights and to market heavyweight hogs carrying too much fat.

The committee reported that extension and agricultural research people contacted repeatedly stated that lack of price incentive in the market is seriously handicapping their educational efforts. The head of one of the larger meatpacking concerns, according to the study group, "stated very positively that the packers were being negligent and shortsighted in this."

Work is now underway, said the subcommittee, on the development of an "ultrasonic" device which, it is expected, will provide an accurate and convenient method of measuring the backfat thickness of live hogs.

It was the opinion of several meatpacking company officials that more grading should be done on the farm and at the central markets, which they believe would have a beneficial effect on the quality of hogs being brought to market.

John A. Albert

HESS & CLARK—John A. Albert, 55, south central district manager for Hess & Clark, Ashland, Ohio, died recently at Stella, Mo., after a short illness. He had been employed with Hess & Clark since 1955. He previously had been self-employed, raising hogs and broilers near Southwest City, Mo., and before that he was with Hales & Hunter, Chicago, as advertising manager and manager of the hog and beef cattle feed departments. He is survived by his wife and daughter.

Portland to Host Bulk Feed Fair

PORTLAND, ORE.—A cross section of bulk delivery units will be displayed March 17-18 in Portland at the Pacific Northwest Bulk Feed Fair. The bulk feed display will be on a fenced and paved lot at N.E. 2nd Ave. and Glisan St. Interior displays will be one block north in the Larson & Baardson, Inc., building, where refreshments will be served.

Live demonstrations of all truck units will illustrate the latest techniques in bulk transport and handling feeds. Various sizes of bulk bins will be set up and filled with feed from the truck units on display. Bulk weighing and conveying, transporting and storing equipment, in action, will be demonstrated to dealers and users.

The Bulk Feed Fair will be held the two days preceding the Oregon Feed & Seed Dealers Convention, which is to be March 19-20.

A goal of the fair is to perform a service of bulk feed education to the Pacific Northwest and is expected to be supported by equipment manufacturers throughout the nation and suppliers in the West. A good attendance of feed dealers, ranchers and farmers is expected also.

Additional information may be obtained from the fair's headquarters, 708 N.E. 2nd Ave., Portland 12, Ore.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

New York: Demand fair; trend steady; supply limited; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½ @15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

Denver: Demand fair; trend steady; supply ample; 300 D, 2,250 A 22¢ lb.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@7½¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Boston: Demand fair; supply adequate; 600 D, 1,500 A 17½¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢; 300 D, 750 A 14¾¢; 400 D, 3,000 A 20¢; 300 D, 3,000 A 19½¢; 75 D, 750 A 14½¢.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

ALFALFA MEAL

Denver: Demand fair; trend steady; supply good; dehydrated $57.

Chicago: Demand good; supply short; 17% dehydrated, with 100,000 units vitamin A guaranteed $71@73; 13% No. 1 fine ground suncured $40@46.

Ft. Worth: Demand fair; supply sufficient; dehydrated, 20% protein, 150,000 A $67, rail; 17% protein, 100,000 A $64, delivered Ft. Worth area, truck, rail $56; suncured 13% No. 1 ¼-in. grind $39@46, truck or rail.

Memphis: Demand fair; trend steady; supply light; dehydrated, 17% protein, guaranteed 100,000 units, vitamin A $73.

New Orleans: Demand fair; trend unchanged; supply light; vitamin A, 17% $79 @81; pellets $77@79.

Portland: Demand slow; supply ample; trend unchanged; suncured $41; dehydrated $68.50.

Philadelphia: Demand and supply fair; trend unsettled; 17% dehydrated $80.

St. Louis: Demand slow; trend steady; supply limited for 17% dehydrated; 13% fine suncured $40; 17% dehydrated, 100,000 A $70.

Omaha: Demand good; trend steady; supply tight; 17% dehydrated, 100,000 A units, bulk pellets $60; sacked meal $85, Omaha basis.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $78.50.

Los Angeles: Demand slow; trend unchanged; supply adequate; dehydrated meal, 17% protein, 100,000 A $51, bulk; dehydrated pellet meal, 17% protein, 100,000 A $53, bulk; suncured meal, 15% protein $42 @43, bulk; suncured crumbles, 15% protein $44@45, bulk.

Boston: Demand light; supply ample; dehydrated, 17% $76; suncured, 13% $50, nominal.

Minneapolis: Slow demand; adequate supplies; steady trend; 17%, 100,000 units A, reground pellets $70; oiled reground $72; $3 less in bulk.

Kansas City: Demand exceeds supply, blenders limiting sales to those who had material booked in many cases because of tight supply; trend steady to stronger; dehydrated alfalfa meal with 17% protein and 100,000 units vitamin A guaranteed on arrival: reground pellets $65 sacked, greased meal $67 sacked, pellets $60 bulk; 18% protein, 125,000 A meal $69 sacked, non-guaranteed A meal $62 sacked; suncured alfalfa meal demand is fair with supplies of 15% material tight but 13% being plentiful, No. 1 fine ground 13% protein $35, No. 1 ¼-in. $33.50@34, No. 2 ¼-in. $30.50 @31, sacked.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $44, truck loads; 136,000 A unit dehydrated $69, truck loads.

Buffalo: Demand poor; trend steady; supply fair; $78, Boston.

ANIMAL FAT (STABILIZED)

St. Paul: Good feed demand; market firm as supplies are held tightly; 7¢ lb., f.o.b. producer's plant for bleachable fancy tallow.

New Orleans: Demand fair; trend steady; supply adequate; 6½@7¢ lb., tank cars.

Chicago: Demand good; supply short; bleachable fancy tallow, tank truck or carlots 7⅛@7⅜¢ lb.; yellow grease 6¾@ 7¢ lb.

Atlanta: Demand good; trend steady; supply barely ample; 7¢ lb., bulk.

Ft. Worth: Demand fair; supply sufficient; prime tallow, tank cars 6¾¢ lb.; drums 8½¢ lb., f.o.b. north Texas packing plants with returnable drums.

San Francisco: Demand fair; supply ample; bleachable fancy 7¾¢ lb.; yellow grease 6¾¢ lb.

Louisville: Demand fair; supply good; trend unchanged; bleachable fancy 7¼¢ lb.; white tallow 7¾¢ lb.; yellow grease 6¢ lb.

Boston: Demand fair; supply good; tallow 7¼¢ lb.; yellow grease 6¾¢ lb.

Kansas City: Demand fair; trend steady to stronger; supply adequate; bleachable fancy tallow 6¾@6¾¢ lb., tank cars.

BARLEY FEED

New Orleans: Demand slow; trend unchanged; supply adequate; $84@85.

Portland: Demand slow; trend lower; supply ample; rolled $63, ground $61.

Baltimore: Demand good; supply adequate; $48.50.

Chicago: Demand good; supply adequate; $38.

San Francisco: Demand fair; supply ample; rolled $65.60; ground $64.50.

Philadelphia: Demand slow; supply fair; pulverized $51.50.

Milwaukee: Demand fair; supply good; needles $1@1.10 cwt.; ground screenings $25, sacked, Milwaukee.

Los Angeles: Demand slow; trend steady; supply adequate; standard rolled $3.30 cwt.; standard ground $3.30 cwt.

Boston: Demand slow; supply fair; $48.

Seattle: Demand fair; trend easy; supply good; $52 bulk, truck lots.

BENTONITE (SODIUM)

Denver: Demand fair; trend good; supply ample; $21.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots, 80 granular $13.50 net; 200 mesh fine $13.25 net.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 30 granular $31.50; 200 mesh fine $31.

BLOOD FLOUR

Louisville: Demand slow; trend steady; supply good; $120@125.

BLOOD MEAL

Chicago: Demand fair; supply light; $142.50, guaranteed 80% protein.

New Orleans: Demand slow; trend easy; supply ample; $120@125.

Portland: Demand slow; supply ample; trend unchanged; $130.

San Francisco: Demand good; supply tight; $8 a unit of ammonia.

Louisville: Demand slow; trend firm; supply good; $120@125.

Los Angeles: Demand fair; trend unchanged; supply limited; $7.50 a unit of ammonia.

BONE MEAL (STEAMED)

Chicago: Demand fair; supply light; $100.

Louisville: Demand slow; trend steady; supply light; $95@105.

Denver: Demand good; trend firm; supply very limited; $80.60, Bay Shore, Cal.

Ft. Worth: Demand good; supply light; $90, f.o.b. Ft. Worth, local manufacture.

New Orleans: Demand slow; supply normal; trend steady; $96@106.

Portland: Demand slow; supply ample; trend unchanged; $100.

Cincinnati: Demand fair; trend strong; supply very short; $120.

Los Angeles: Demand slow; trend unchanged; supply adequate; imported $73.50, in 20-ton lots.

San Francisco: Demand good; supply ample; $75.

Boston: Demand and supply steady; $90.

Seattle: Demand steady; trend firm; supply good; $87, ex-dock, truck lots.

Buffalo: Demand good; trend steady; supply ample; $96.

BREWERS DRIED GRAINS

Chicago: Demand fair; supply adequate; 26% $52.50.

Ft. Worth: Demand slow; supply moderate; 26% protein $59.80.

Cincinnati: Demand fair; trend lower; supply adequate; $59.

St. Louis: Demand good; trend steady; supply good; $51.

San Francisco: Demand fair; supply ample; $54.

New Orleans: Demand fair; trend easy; supply ample; $55@56.50.

Philadelphia: Demand and supply fair, trend unsettled; $62.

Louisville: Demand fair; trend steady; supply ample; $54.

Milwaukee: Demand good; supply fair; $52.50.

Los Angeles: Demand slow; trend steady; supply limited; $49.50 bulk, $53.50 sacked.

Boston: Demand fair; supply good; 22% $57.50; 26% $59.50@61.50.

Buffalo: Demand fair; trend steady; supply good; $53.50, bulk, Boston.

BREWERS DRIED YEAST

Portland: Demand good; trend steady; supply ample; 8½¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb.

Denver: Demand light; trend steady; supply ample; 9¢ lb., f.o.b. Golden, Colo.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots, 10¼@12½¢ lb., l.c.l.

Louisville: Demand fair; trend steady; supply good; 10@10½¢ lb.

Omaha: 10½¢ lb.

Los Angeles: Demand and trend steady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Boston: Demand and supply steady; 10¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ in ton lots; 12¢ lb. in less than ton lots.

Buffalo: Demand good; trend steady; supply limited; $10.50 cwt.

BUTTERMILK-CONDENSED

New Orleans: Demand fair; trend unchanged; supply normal; $4.25@4.30 cwt.

San Francisco: Demand fair; supply good; $5 cwt.

Philadelphia: Demand slow; supply light; $4.25 cwt.

Chicago: Demand fair to good; supply light; $3.25@3.50 cwt. in carlots.

Wichita: Demand slow; supply about offsets demand; $2.90 cwt. in barrels.

Louisville: Demand slow; trend steady; supply light; $4.25 cwt.

Los Angeles: Demand slow; trend steady; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

Boston: Demand quiet; supply tight; 3⅛¢ lb., nominal.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight)

New York: Crystals $15.28, flour $10.28.
Buffalo: Crystals $16.11, flour $11.11.
Toledo: Crystals $17.96, flour $12.96.
Boston: Crystals $16.53, flour $11.63.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Chicago: Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $8.94; granular grind $1 premium.

Los Angeles: Demand slow; trend unchanged; supply ample; $10.25.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

San Francisco: Demand steady; supply ample; $141.

Los Angeles: Demand slow; trend steady; supply ample; hardwood poultry $156 in less than ton lots; $144.40 in ton lots.

Boston: Demand and supply steady; $100.

Chicago: Demand quiet; supply adequate; poultry charcoal $110 in 50-lb. multiwalls.

COCONUT OIL MEAL

Portland: Demand slow; supply ample; trend unchanged; $85.

San Francisco: Demand good; supply tight; solvent $82.50, expeller cake $93.

Los Angeles: Demand slow; trend steady; supply adequate; copra cake $83@84.

Seattle: Demand fair; trend steady; supply ample; $80, via truck (California).

COD LIVER OIL (FORTIFIED)

New York: Demand limited; trend steady; supply fair; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@ 15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@ 19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

Boston: Demand fair; supply adequate; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18¾¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

CONDENSED FISH SOLUBLES

New Orleans: Demand light; supply limited; trend steady; 50% solid $105@108.

Los Angeles: Demand slow; trend steady; supply light; 5¢ lb.

Boston: Demand active; supply scarce; 5¢ lb., nominal.

New York: Demand good; trend steady; supply tight; 5⅛@5¼¢ lb., f.o.b. eastern shore.

Denver: Demand fair; trend steady; supply ample; dried $182.40.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $57.80, meal $56.80.
Atlanta: Feed $63.98, meal $92.98.
Birmingham: Feed $62.64, meal $91.64.
Boston: Feed $62.84, meal $91.84.
Chicago: Feed $51, meal $80.
Cleveland: Feed $59.14, meal $88.14.
Denver: Feed $61.51, meal $90.51.
Ft. Worth: Feed $59.96, meal $88.96.
Indianapolis: Feed $56.36, meal $86.36.
Kansas City: Feed $51, meal $80.
Louisville: Feed $58.21, meal $87.21.
New Orleans: Feed $61.20, meal $90.20.
New York: Feed $62.43, meal $91.43.
Norfolk: Feed $61.71, meal $90.71.
Philadelphia: Feed $62.02, meal $91.02.
Pittsburgh: Feed $59.96, meal $88.96.
St. Louis: Feed $51, meal $80.

CORN OIL MEAL

Louisville: Demand slow; trend unchanged; supply light; $61.45.

Cincinnati: Demand fair; trend steady, supply adequate; $88.

COTTONSEED OIL MEAL

Memphis: Demand light; trend lower; supply plentiful; prime 41% protein, old process $65; new process, 41% solvent $63.

New Orleans: Demand slow; trend steady; supply adequate; $76@77.

Omaha: Demand slow; trend easy; supply ample; 41% solvent $67.30, bulk.

Cincinnati: Demand fair; trend steady; supply adequate; $72.

Portland: Demand slow; trend lower; supply ample; $76.

San Francisco: Demand good; supply tight; 41% solvent $78; 44% solvent $79.

Philadelphia: Demand slow; trend unsettled; supply fair; $82.

Louisville: Demand slow; trend stronger; supply normal; old process $71; new process $70.

Wichita: Demand good; supply sufficient; 41% old process $76.

Boston: Demand poor; supply ample; $80.

St. Louis: Demand fair; trend higher; supply adequate; solvent $69.

Los Angeles: Demand fair; trend steady; supply light; $70, bulk.

Denver: Demand fair; trend steady; supply ample; sacked basis, 2% fat $71.60.

Chicago: Demand and supply fair; hydraulic $65; solvent $64, basis Memphis.

Atlanta: Demand fair; trend weak; supply ample; 41% $67.

Ft. Worth: Demand fair; supply sufficient; 41% old process $73, prompt; pellets $2 additional; cottonseed hulls $13@13.50.

Seattle: Demand fair; trend easy; supply ample; $82, truck lots, 41% solvent process.

Kansas City: Demand slow; trend steady to stronger; supply adequate; Texas supplies are also competitive in the Kansas City area because of new rail rates; old process meal $65.50, sacked, Memphis; solvent $63.

Buffalo: Demand and supply fair; trend steady to higher; $82.50, Boston.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

New York: Demand and supply good; trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9¾@10¢ lb.; 3,000 ICU 11½@12¢ lb. in ton lots or larger.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb.; 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

Cincinnati: 18% phosphorus $81, sacked; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

Portland: Demand slow; supply ample; trend unchanged; $115.

Cincinnati: 18½% phosphorus $92@93.

Denver: Demand good; trend firm; supply ample; $92.80.

DISTILLERS DRIED GRAINS

Philadelphia: Demand slow; supply light, dark $73.50.

San Francisco: Demand fair; supply ample; solubles $85.

Seattle: Demand fair; trend steady; supply limited; $67, truck lots.

Louisville: Demand good; trend steady; supply fair; bourbon: light $58, dark $59, solubles $77.

Boston: Demand good; supply improved; Canadian medium dark $69; domestic light $64.50, bulk; dark $65.50, bulk.

Cincinnati: Demand poor; trend steady; supply fair; $59.

Buffalo: Demand and supply fair; trend steady; $63, bulk, Boston.

DRIED BEET PULP

Portland: Demand good; supply ample; trend unchanged; $54.

New Orleans: Demand fair; trend unchanged; supply sufficient; $57@58.

Seattle: Demand good; trend firm; supply limited; $49, carlots.

San Francisco: Demand good; supply fair; $55.50.

Milwaukee: Demand good; supply fair; plain $55, molasses $55.

Boston: Demand good; supply adequate; $60.

Los Angeles: Demand slow; trend steady, supply limited; molasses $52.50@53.60, bulk.

Atlanta: Demand fair; trend steady; supply ample; $62.50.

Ft. Worth: Demand fair; supply sufficient; carlots, 50-lb. papers, March, plain or molasses $58.33, delivered Ft. Worth.

Buffalo: Demand and supply fair; trend steady to higher; $60.50, Boston.

DRIED BUTTERMILK

Chicago: Demand good; supply scarce; medium acid $10.75@11.25; sweet cream $11@11.50 cwt. in carlots.

New Orleans: Demand slow; trend unchanged; supply adequate; $11.75@12.25 cwt.

San Francisco: Demand fair; supply ample; 11½¢ lb.

Louisville: Demand slow; trend steady; supply light; 12@12½¢ lb.

Milwaukee: Demand and supply fair; $10 cwt.

Los Angeles: Demand slow; trend steady; supply adequate; 11¾¢ lb.

Buffalo: Demand good; trend firm; supply limited; $11.45 cwt.

DRIED CITRUS PULP

Atlanta: Demand fair; trend steady; supply ample; $35@37.50; meal $30@35, f.o.b. Florida producing mills.

New Orleans: Demand fair; trend steady; supply ample; $33@38, f.o.b. Florida.

Boston: Demand fair; supply light; $37.50, f.o.b. Florida.

San Francisco: Demand and supply fair; meal $54.

Los Angeles: Demand good; trend steady; supply limited; orange pulp $47, bulk; lemon pulp $45, bulk.

Buffalo: Demand and supply fair; trend steady; $35, f.o.b. Florida points.

DRIED SKIM MILK

Portland: Demand good; supply ample; trend unchanged; 13¢ lb.

Louisville: Demand slow; trend steady; supply light; 12@12½¢ lb.

San Francisco: Demand and supply fair; 13½¢ lb.

New Orleans: Demand slow; supply ample; trend steady; $11.50@12 cwt.

Philadelphia: Demand slow; supply light; $12.50 cwt.

Milwaukee: Demand and supply fair; $11 cwt.

Cincinnati: Demand fair; trend steady; supply adequate; 10½@10¾¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

Boston: Demand good; supply short; 12¢ lb.

Chicago: Demand fair; supply light; $10.65@11 cwt. in carlots.

Minneapolis: Good demand for tight supplies; trend steady; $10.75@11 cwt.

Buffalo: Demand fair; trend steady; supply ample; spray $10.65 cwt.

DRIED WHEY

Chicago: Demand fair; supply light; $5.50 cwt., f.o.b. plant.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6; $6.25 ton lots, f.o.b. warehouse, Ft. Worth.

New Orleans: Demand fair; trend steady; supply adequate; $6@6.50 cwt.

Portland: Demand good; supply ample; trend unchanged; $7 cwt.

San Francisco: Demand steady; supply good; $5.75 cwt.

Philadelphia: Demand slow; supply light; $6.50 cwt.

Seattle: Demand and trend steady; supply good; $6.40 cwt., ex-warehouse, l.c.l.

Louisville: Demand sow; trend stronger; supply light; 6½@7¢ lb.

Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.

Los Angeles: Demand slow; trend unchanged; supply ample; $6.10 cwt., in carloads; $6.40 cwt. in l.c.l.

Boston: Demand and supply steady; 5½¢ lb., f.o.b. shipping points.

Minneapolis: Demand fair; trend steady; supply adequate; $5.50 cwt., f.o.b. producers' plants.

FEATHER MEAL (HYDROLYZED)

Atlanta: Demand good; trend steady; supply nearing ample; $106.50, f.o.b. Georgia and Alabama producing plants.

Ft. Worth: Demand excellent; supply limited; 85% to 87% protein $105, f.o.b. trucks, north Texas plants.

Los Angeles: Demand better; trend unchanged; supply ample; $1.25 a unit of protein.

Boston: Demand good; supply tight; $85, f.o.b. shipping points.

Salisbury, Md.: Demand good; supply limited; $100 bulk, f.o.b. plants.

FISH MEAL

New Orleans: Demand and supply light; trend steady; menhaden, 60% $162@163; scrap, 60% $158@159, f.o.b. Gulf.

Portland: Demand slow; supply ample; trend unchanged; $2.25 a unit of protein.

San Francisco: Demand good; supply tight; $2.40 a unit of protein.

Seattle: Demand fair; trend firm; supply good; $2.38 a unit protein, truck lots (Canadian production).

Louisville: Demand dull; trend strong; supply light; $175, nominal.

Milwaukee: Demand and supply fair; 60% $159, Milwaukee.

Cincinnati: Demand fair; trend steady; supply adequate; $164.

Los Angeles: Demand good; trend firm; supply tight; local production, 60% protein $2.40 a unit.

Boston: Demand active; supply scarce; domestic $164, nominal.

Denver: Demand good; trend steady; supply tight; $2.40 a unit of protein, f.o.b. West Coast.

Chicago: Demand fair; supply tight; eastern menhaden fish meal, 60% protein $160, Gulf $160; western blended, 60% protein $180, delivered Midwest; Canadian herring, 73% protein $2.20@2.22 a unit of protein subject to production.

Atlanta: Demand fair; trend weak; supply ample; Angola $164.

Ft. Worth: Demand good; limited offerings; 65% Peruvian $158, f.o.b. Houston.

Buffalo: Demand good; trend steady; supply ample; 60% protein, menhaden $175 bulk, $180 sacked.

Minneapolis: Supply light; good demand; steady trend; 60% $180; 70% herring $2.22 a unit, f.o.b. West Coast.

HAY

Portland: Demand fair; supply ample; trend unchanged; $32@33.

Seattle: Demand and supply fair; trend steady; alfalfa, U.S. No. 2 green $35, truck lots.

Philadelphia: Demand slow; supply light; $32.

Wichita: Demand improved; supply ample; prairie $15, alfalfa $15@18.

Louisville: Demand dull; trend steady; supply ample; local hay, all varieties, No. 1 $25, No. 2 $23; straw, any variety $25.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.

Los Angeles: Limited demand; light supplies; U.S. No. 1 $33@35; U.S. No. 2 leafy $30@32; U.S. No. 2 green $28@30; U.S. No. 2 $24@26.

Boston: Demand and supply steady; No. 2 timothy $40@42.

Denver: Demand average; trend fair; supply ample; alfalfa, baled $24@25, first and second cutting.

Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $34@36, No. 2 $32@34; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.

HOMINY FEEDS

Memphis: Demand nil; trend firm; supply ample; white $47, yellow $49.

New Orleans: Demand fairly good; trend steady; supply light; $47.50@48.50.

Louisville: Demand slow; trend easy; supply light; $47.50@51.

Seattle: Demand and supply good; trend firm; $55, carlots.

Milwaukee: Demand good; supply fair; $47.

St. Louis: Demand fair; trend steady; supply ample; yellow $47.50.

Kansas City: Demand slow; trend steady; supply adequate; yellow $37@37.50 bulk, $3.50 for sacks; white $1 less.

Cincinnati: Demand poor; trend lower; supply adequate; $50.50.

Boston: Demand and supply steady; $58.50.

Buffalo: Demand and supply fair; trend steady; $53.50, bulk, Boston.

LINSEED OIL MEAL

New Orleans: Demand fair; trend easier; supply tight; $87@89.

Portland: Demand slow; supply ample; trend unchanged; $85.

San Francisco: Demand fair; supply ample; $80.

Seattle: Demand fair; trend firm; none available; $90, carloads, 34% protein.

Kansas City: Demand good; trend stronger; supply tight; solvent meal $72 for March, $71 for April, bulk, Minneapolis; old process meal $76.

Philadelphia: Demand slow; supply fair; 34% $93.

Denver: Demand fair; trend steady; supply ample; $88.50.

Chicago: Demand fair; supply tight; solvent $75.50; expeller $80, basis Minneapolis.

Chicago: Demand fair; supply tight; $48.

Ft. Worth: Demand slow; supply adequate; carlots 34% solvent, March-April-May-June $95; pellets $2.50 premium; truck $94.50@95.

Wichita: Demand slow; supply ample; 34% $86.

Louisville: Demand dull; trend stronger; supply fair; old process $94, new process $89.50.

Milwaukee: Demand good; supply fair; old process $86.50; new process $82.

Omaha: Demand good; trend strong; supply tight; 34% solvent $77.30, bulk; 32% old process $80.30, bulk, Omaha basis.

Cincinnati: Demand poor; trend steady; supply adequate; $92.

Los Angeles: Demand fair; trend firmer; supply limited; local production, 29% protein $70, bulk.

Boston: Demand slow; supply adequate; $92.

Minneapolis: Good demand; supplies tight; firmer trend; solvent meal $71.50 for March, $70.50 for April-May; expeller $76.

MALT SPROUTS

Boston: Demand and supply limited; $42.50.

Cincinnati: Demand poor; trend steady; supply adequate; No. 1 $45.

Milwaukee: Demand good; supply fair; oddweights $37; evenweights $39.50.

New Orleans: Demand fair; trend steady; supply adequate; $45@47.

Chicago: Demand fair; supply adequate; No. 1 $41.

MEAT AND BONE MEAL

Ft. Worth: Demand slow; supply adequate; meat and bone, 50% $100@102.50, f.o.b. or delivered Ft. Worth.

Chicago: Demand fair; supply light; 50% protein $105@110.

New York: Demand and supply fair; trend steady; 50% $95.50, 55% $103, bulk; 50% $98.50, 55% $106.

Seattle: Demand good; trend strong; supply limited; $100, ex-warehouse, 50% protein.

Denver: Demand slow; trend slow; supply ample; 50% $99.50, truck lots, bagged; $101 small lots per ton.

Boston: Demand and supply steady; $1.70 a protein unit; converted 50% $97.50.

Los Angeles: Demand good; trend firmer; supply adequate; 50% protein $2.05 a unit.

Cincinnati: Demand good; supply fair; trend strong; 50% meat and bone scraps $104.50.

Omaha: Demand fair; trend easy; supply ample; $107.

St. Louis: Demand slow; trend lower; supply ample; $108.

Kansas City: Demand good; trend steady; supply adequate; 50% meat and bone scraps $107.50.

Louisville: Demand slow; trend firm; supply good; $105@115.

Wichita: Demand moderate; supply sufficient; 50% $112.50, f.o.b. plant; 55%, no quotations, no offerings.

San Francisco: Demand good; supply ample; $1.95 a unit of protein.

Portland: Demand slow; supply ample; trend unchanged; $2 a unit of protein.

New Orleans: Demand good; trend strong; supply adequate; $108@108.50.

Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps $102.50 bulk, $107.50 sacked.

St. Paul: Slow demand; adequate supplies; weaker undertone; 50% meat and bone meal $107@111.

MILLFEED

Minneapolis: Firmer undertone; nearby supplies sold as demand improved and running time slowed; bran and middlings $44@45; red dog $47@49.

Kansas City: Demand good for sacked feeds; trend stronger for sacked; supply tight for sacked feeds, more available on bulk; bran $40.25@41, shorts $41.50@42.25, sacked; bran $36@36.75, shorts $38.50@39.25, middlings $38.50@39.25, bulk.

Wichita: Demand fair; supply sufficient; basis Kansas City: bran $40.25@40.75, shorts $40.75@41.25; bran advanced $2.75 and shorts $3 compared with the preceding week.

Omaha: Demand fair; trend steady; supply tight; sacked bran $41.50; sacked gray shorts $43; bulk standard midds. $41.

Ft. Worth: Demand fair; limited offerings for immediate shipment; carlots, burlaps, prompt, bran $49, gray shorts $49.50 @50; bulk middlings $45.50, delivered Texas common points; $3 higher on bran, $3@3.50 higher on shorts, $2.50 higher on middlings compared with previous week.

Chicago: Demand for millfeeds was fairly slow most of the week ending March 6, but prices showed a certain degree of firmness and it is believed that any pick-up in buying would produce a price upturn. Quotations: bran $47.50@48, standard midds. $48, red dog $51.

Cincinnati: Demand fair; trend higher; supply adequate; bran and middlings $54.50.

Seattle: Demand fair; trend steady; supply limited; $48, common transit points, carlots.

St. Louis: Demand fair; trend steady; supply ample; bran $45.50@46, shorts $47

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

@47.50, sacked; bran $41@41.50, shorts $44 @44.50, middlings $43.50@44, bulk.

Memphis: Demand fair; trend firm; supply ample; bran $48, gray shorts $48.50, standard midds. $48.50.

Buffalo: Supplies and demand for millfeeds were about at a standoff and prices held relatively unchanged. Bran and middlings shipping positions were thin on a little easier flour mill running time. Some mixers' business picked up, others declined and some held unchanged; sacked bran, middlings and red dog ended unchanged; sacked bran, middlings and red dog were off 50¢. Quotations March 4: sacked bran $50.50@51, bulk $44.50@45; sacked middlings $51.50@52, bulk $45.50@46; sacked red dog $52@53, bulk $46@47.

Boston: Demand cautious; supply spotty; bran $59.50, middlings $58.50.

Philadelphia: Demand spotty; trend unsettled; supply fair; bran $59, standard midds. $59.50, red dog $63.

New York: Demand and supply good; trend higher; bran $57@57.50, standard midds. $58@58.50.

New Orleans: Demand good; trend strong; supply light; bran $49.50@50.25 sacked, $45.50@46.25 bulk; shorts $49.50@50.25 sacked, $47@47.75 bulk.

Louisville: Demand fair; trend stronger; supply good; bran $51.60; mixed feed $52.50, shorts $53.60, middlings $54.80.

Denver: Demand fair; trend steady; supply ample; shorts $42.25, bran $40.75, mill run $41.50.

Portland: Demand good; trend firm; supply limited; $44.

Los Angeles: Standard mill run $51.50, good demand, easier trend, offerings more plentiful; red bran $54@55, slow demand, firmer trend, ample supplies.

San Francisco: Demand good; supply tight; millfeed $54, red bran $58.

MINERAL FEED

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $55, ex-warehouse.

Ft. Worth: Demand good; supply light; all-purpose granules $90, block $97; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3¼% granules $87; phosphorus 2% $77 (all in 50-lb. paper bags).

Wichita: Demand good; supply sufficient; all-purpose with iodine, 50-lb. blocks $97.50, 100-lb. bags $92.50, f.o.b. plant.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Portland: Demand slow; supply ample; trend unchanged; $45.

Denver: Demand good; trend steady; supply ample; $155.

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Ft. Worth: Demand good; supply sufficient; blackstrap 13¾¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $29.36 ton, seller's market price on date of shipment.

Atlanta: Demand fair; trend steady; supply limited; citrus $20@22.50 in bulk, f.o.b. Florida producing mills.

Denver: Demand fair; trend steady; supply ample; 12½¢ gal., New Orleans; $21.37 ton; $22 ton, West Coast.

Boston: Demand steady; supply adequate; 16½¢ gal. in tank cars.

Los Angeles: Demand steady; trend unchanged; supply ample; $22, bulk, f.o.b. tank cars; $22.25, bulk, f.o.b. tank trucks.

Kansas City: Demand fair; trend stronger; supply adequate to ample for spot; spot offered at 12¼¢ gal.; scattered March at 12½¢ gal., tank car, New Orleans.

Cincinnati: Demand fair; trend steady; supply adequate; 12½¢ gal., New Orleans.

St. Louis: Demand slow; trend lower; supply ample; 12¼¢ gal., New Orleans.

Milwaukee: Demand fair; supply good; blackstrap 13¢ gal., f.o.b. New Orleans.

Louisville: Demand slow; trend easy; supply ample; 12¼¢ gal., tank car lots, f.o.b. Gulf ports.

San Francisco: Demand and supply good; $22, f.o.b. cars, Richmond, Cal.

New Orleans: Demand fair; trend steady; supply adequate; 12½¢ gal., tank cars and trucks; 600-lb. customers' drums $8.33.

Memphis: Demand poor; trend steady; supply plentiful; blackstrap 12½¢ gal., tank car, f.o.b. New Orleans and $29 ton, delivered Memphis, truck.

Seattle: Demand fair; trend easy; supply good; $25, f.o.b. Seattle, tank car lots or truck lots.

Buffalo: Demand and supply good; trend steady; 16¼¢ gal., f.o.b. Albany.

Minneapolis: Better demand; adequate supplies; steady trend; 12½¢ gal., New Orleans; $34 ton, tank trucks, delivered Minneapolis.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Seattle: Demand and supply fair; trend steady; $53, bulk, truck lots.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $50.80; reground oat millfeed, 4% protein, sacked $32, 3% $29.70.

Chicago: Demand and supply fair; reground oat feed $19.50@20; fine ground feeding oatmeal $70@72; feeding rolled oats $79@80.

Boston: Demand fair; supply ample; white pulverized $56.50; reground oat feed $24.

Los Angeles: Demand slow; trend unchanged; supply adequate; pulverized, local production $62.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $51.50; rolled oats $86.

Louisville: Demand fair; trend steady; supply normal; reground $28.30; rolled $84.30; feeding $78.30; pulverized $53.30; crimped $66.30.

Philadelphia: Demand slow; supply fair; pulverized white $55; Canadian oat feed $31.50; domestic oat feed $31.

Portland: Demand slow; supply ample; trend unchanged; rolled $65, ground $62, cleaned $65.

Memphis: Demand poor; trend weaker; supply plentiful; 2½% protein, reground oat feed $25.

Minneapolis: Demand unchanged; ample supplies; steady trend; feeding rolled oats $77; feeding oatmeal $67.50; crimped $55; pulverized $46; reground oat feed $20.

OYSTER SHELL

Seattle: Demand and trend steady; supply good; eastern $36, carlots.

Boston: Demand and supply steady; $26 in paper.

Los Angeles: Demand slow; trend steady; supply ample; $14.80.

Cincinnati: Demand fair; trend steady; supply adequate; $24.45.

Louisville: Demand good; trend firm; supply normal; in 80-lb. paper $23.45; in 50-lb. paper $23.70; in 25-lb. paper $25.95.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Portland: Demand slow; supply ample; trend unchanged; western $34, eastern $35.50, granite grits $28, shell flour $24.

New Orleans: Demand good; trend firm; supply ample; $23@23.50.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $62.50, f.o.b. Georgia and Alabama producing mills.

Milwaukee: Demand and supply fair; 26% $42.

PEAT MOSS

Seattle: Demand fair; trend easy; supply good; $2.50 bale, truck lots.

Boston: Demand and supply steady; $3.15 bale in carlots.

Los Angeles: Demand better; supply ample; trend steady; Canadian, 6.1 cu. ft. bales $3.75.

Philadelphia: Demand slow; supply light; $2.93 bale, f.o.b. pier.

San Francisco: Demand and supply fair; $3.65 bale.

Portland: Demand slow; supply ample; trend unchanged; $3 bale.

Chicago: Demand good; supply tightening; $3.75@3.85, standard 7½ cu. ft. bale.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

Chittenango, N.Y.: Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36, freight prepaid to destination.

POULTRY BY-PRODUCTS

Boston: Demand fair; supply tight; $108.

Los Angeles: Demand slow; trend firmer; supply ample; $1.85 a unit of protein.

Ft. Worth: Demand heavy; supply limited; 55% protein $115, f.o.b. north Texas plants.

Atlanta: Demand normal; some weakness in trend indicated; supply ample; $108, f.o.b. Georgia and Alabama producing mills.

Salisbury, Md.: Demand good; supply limited; steady trend; $102 bulk, f.o.b. producers' plants.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 1¢ gm./lb. mixtures; freight prepaid or paid to destination.

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 1¢ gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand slow; supply scarce; carlots, rice bran $40, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

Atlanta: Demand good; trend steady; supply very limited; $58.

Los Angeles: Demand slow; trend steady; supply limited; California production, high fat content $69.

San Francisco: Demand good; supply ample; bran $45; polished $49.

SCREENINGS

Cincinnati: Demand fair; trend steady; supply adequate; malt house $32; malt sprouts $45.

Ft. Worth: Demand slow; supply sufficient; ground grain $28.

Chicago: Demand slow; supply adequate; ground grain screenings $36@36.50; Canadian, bulk $31.50.

Buffalo: Demand and supply fair; trend steady; ground, sacked $43.50, New York; unground, bulk $35.50, New York.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.33@24.95.
St. Louis: $24.14@24.27.

Minneapolis: Light supplies of both Canadian and domestic; fair demand; no price change; lights $10@20; mediums $21@30; heavies $31@40; Canadian bulk $26; Canadian ground $35; flaxseed screenings $35; oil type flaxseed screenings $45, basis 15%.

SORGHUMS

Ft. Worth: Demand fair; offerings light; carlots, bulk, No. 2 yellow milo $2.32@2.33, delivered Texas common points.

Los Angeles: Demand fair; trend firmer; supply adequate; milo $2.52½ cwt., bulk.

SOYBEAN OIL MEAL

Minneapolis: Demand slow; adequate supplies; market little firmer at $48 bulk, Decatur, for 44%; April-May $49.50; 50% $57 bulk, Decatur; April-September $58.50.

Seattle: Demand fair; trend weak; supply ample; $80, carlots.

Kansas City: Demand slow for 44% protein meal but very strong for 50% meal in the broiler areas; trend weaker on 44% and stronger on 50%; supply ample for standard meal but tighter for 50%; 44% meal for Kansas City and western shipment $51@52, bulk, Decatur, 50% $59; unrestricted 44% meal $57.50, 50% protein $64.50.

Boston: Demand good; supply spotty; 44% $55; 50% $61, both bulk, f.o.b. Decatur.

Los Angeles: Demand fair; trend firmer; supply ample; $77.40, bulk.

Cincinnati: Demand poor; trend higher; supply adequate; $58, bulk, Decatur.

Omaha: Demand poor; trend easy; supply ample; 44% $60.90, bulk.

St. Louis: Demand slow; trend lower; supply ample; 44% $66.50.

Milwaukee: Demand good; supply fair; $55.50, bulk, Decatur.

Louisville: Demand slow; trend stronger; supply fair; $66.20.

Wichita: Demand fair; supply adequate; 44% $69, 50% $77, f.o.b. Wichita.

Philadelphia: Demand and supply fair; trend unsettled; 44% $56, bulk, Decatur.

San Francisco: Demand good; supply ample; $80.40.

Portland: Demand slow; trend weak; supply ample; $48, f.o.b. Decatur.

New Orleans: Demand fair; trend steady; supply adequate; $64@64.50.

Memphis: Demand slow; trend steady; supply plentiful; prime 44% solvent $63.50.

Ft. Worth: Demand fair; supply sufficient; carlots, 44% March $69.60, April-September $70.60; 50% March $81.40, April $82.40.

Atlanta: Demand fair; trend steady; supply good; 44% $70.

Chicago: Soybean oil meal prices showed some increase for the week ending March 4 but easiness was apparent at the close and some of the earlier gains had been lost. Supplies are said to be adequate, but not heavy, and mixer buying amounts to only a fair volume. Quotations: 44% protein soybean oil meal, bulk, unrestricted, basis Decatur $56.50@57; eastern restricted $54.50@55; 50% bulk, unrestricted $63.50@64; eastern restricted $59.50@60.

Denver: Demand fair; trend steady; supply ample; $77.

TANKAGE

Cincinnati: Demand slow; trend steady; supply ample; 60% digester $112.50.

Omaha: Demand fair; trend easy; supply ample; $112.

Kansas City: Demand good; trend steady; supply adequate; 60% digester $110.

St. Louis: Demand slow; trend lower; supply ample; $113.

St. Paul: Slow demand; adequate supply; weaker undertone; $105@108 for 60% digester.

Louisville: Demand slow; trend steady; supply good; 60% $110@120.

Ft. Worth: Demand slow; supply scarce; 60% digester $109.

Chicago: Demand fair; supply light; 60% protein $110@115.

Wichita: Demand moderate; supply sufficient; 60% $117.50, f.o.b. plant.

New Orleans: Demand fair; trend steady; supply adequate; $124.50@125.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; limited offerings; 6%¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100 lb. drums $1.50; in 25 lb. drums $1.55; freight allowed to destination.

New York: Demand and supply good; trend steady; 100 lb. drums $1.50 lb., 25 lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100 lb. drums $1.50 lb., 25 lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

New Orleans: Demand fair; trend steady; supply fair; $79@80.

Chicago: Price moved up sharply as demand strengthened and running time cut back; $76.

Buffalo: Demand and supply fair; trend higher; commercial grade $77.

CORN OIL MEAL

Louisville: Demand slow; trend unsteady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Buffalo: Demand and supply fair; trend steady; $63, bulk, Boston.

USDA Announces Price Policy for Flaxseed Sales

WASHINGTON—A pricing policy covering sales of flaxseed owned by the Commodity Credit Corp. from April 1 through July 31 of this year has been announced by the U.S. Department of Agriculture.

Sales for domestic crushing or export will be made at the market price, but not less than 1958 support prices for No. 1 and No. 2 grades of flaxseed. This sales policy will apply during the four-month period to flaxseed already taken over under the price-support loan program in California and Arizona and any flaxseed which may be taken over after the March 31, 1959, maturity date for loans in other producing areas.

A short-term sales policy for 1958-crop California and Arizona flaxseed taken over after the loan maturity date (Jan. 31, 1959) in those states and extending through March 31, 1959, was announced by USDA Dec. 11, 1958. At that time USDA said a pricing policy for all 1958-crop flaxseed in CCC inventory March 31, 1959, and subsequent acquisitions, would be announced prior to the March 31 takeover date.

Premiums and discounts used in determining minimum prices will be the same as those provided in USDA's 1958 flaxseed loan bulletin. The only discount, for No. 2 flaxseed, is 6¢ bu. Premiums of 1@4¢ bu. will apply to flaxseed with moisture content below 10.6%, depending upon the percentage of moisture, the USDA said.

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BATCHING EQUIPMENT — Shown is the new automatic batching equipment developed by the Howe Scale Co., Rutland, Vt. The equipment involves "Batchplugs" for different formulas, and can handle up to 10 ingredients per formula.

New Batching System Announced by Howe

RUTLAND, VT.—A new development in the design and construction of automatic batching equipment has been announced by the Howe Scale Co., Rutland, Vt.

Incorporating a formula control component called the Howe Batchplug, the new system provides "instant" formula changing while completely eliminating any human error sometimes present in manual ingredient dialing systems, according to Howe officials.

Each standard Batchplug is a self-contained formula which provides preset control for up to 10 ingredients per formula. The Batchplug itself is about the size of a pack of cigarettes, and each one has an individual nameplate for quick identification. A rack is available for holding several Batchplugs where a plant uses a number of different formulas for its normal production activities.

A small screwdriver is the only tool required to set the Batchplug for proper control over any batching operation. Individual Batchplugs can be sealed within one scale graduation to provide compliance with all local, state and federal batching regulations. No special operator skill is required to adjust or operate the Batchplug and the batching control system, according to a Howe announcement.

The company declared further that the Batchplug greatly simplifies electric circuitry and reduces control cabinet size, thereby "providing substantial economies which in many cases will bring automatic batching within the range of smaller firms. The Batchplug system can be used in the largest or the smallest automatic batching operations. Five basic Batchplug models are now available to control up to 10 ingredients with up to three scales."

Details, including technical literature and specifications, are available from the Howe Scale Co., Rutland, Vt.

New Mill 'Package' Developed by Shelby

SIDNEY, OHIO—A complete shelling, grinding and mixing mill unit with a capacity of between 50 and 80 tons a day has been developed and introduced by the Shelby Manufacturing Co. of Sidney.

The unit is designed, according to the manufacturer, for maximum efficiency with a minimum of space. An area 26 ft. long, 9 ft. wide and 18 ft. high is said to be space enough for installation.

Shelby spokesmen say one man can easily handle the output if the feed is handled in bulk only, and that two men can handle the output of bulked and bagged feed.

The control panel consists of fused magnetic starters, trip relay and push-button controls, all wired and interlocked for the proper operating sequence.

For feeding ear corn and grain to the unit, a number of different pit screw assemblies are available for even flow and maximum capacity. For bulking out mixed feed, a vertical or inclined screw is used.

The unit has been named "Simpak," to designate "simplicity in a package."

Shelby also offers a complete feed plant, including bin storage with Simpak as the nucleus of the processing equipment required.

Poultry Hall of Fame Nominations Due

LAFAYETTE, IND.—Dr. J. Holmes Martin, head of the department of poultry science, Purdue University, has issued a reminder that nominations for the Poultry Hall of Fame should be submitted by April 1, 1959.

The nominations are accepted once every three years by the American Poultry Historical Society. The Hall of Fame is now located at Jull Hall, University of Maryland.

Nominations must be submitted on forms obtainable from Dr. Holmes, Poultry Building, Purdue University, Lafayette, Ind. Dr. Holmes is secretary of the society. He mentioned that the nominator will be responsible for supplying authenticated information concerning the nominee.

Important contributions over many years to the building of the poultry industry serve as primary factors in the selection of those to be admitted. The actual selection is made by a committee of 50 outstanding persons in the poultry industry. Nominations may be made by anyone prepared to sponsor the individual and the nominator need not be a member of the society, Dr. Holmes pointed out.

TO BUILD NEW MILL

BRANDON, WIS. — Dayton Redeker and Lloyd Hartgerbrink, former manager and employee, respectively, of the Schmitt Milling Co. plant which was destroyed recently by fire, are arranging to build a new mill, feed warehouse and office to replace the Schmitt establishment.

VALLEY MILLS SALESMEN HONORED—Valley Mills, Vicksburg, Miss., manufacturer of Grade A Feeds, honored three of the firm's feed territory managers at a recent general sales meeting. The winners were presented with sport coats for themselves and a gift for their wives in recognition of having made the highest percentage of sales quota in three categories. The gifts were presented by E. C. Harris (left), general manager, and A. E. Welbourne (fourth from left), sales manager. The territory managers (left to right) are: Harmon Gardner, Vicksburg; Lanis Yarbrough, Kentwood, La., and Vance Lawson, Greenwood, Miss.

Improved Pneumatic Handling Equipment Announced by Firm

GENEVA, ILL. — A new Vac-U-Vator pneumatic grain conveying machine "capable of conveying, cleaning, conditioning and aerating grain from 30 to 90% faster, and moving grain up to 50% more distance" was announced by Dunbar Kapple, Inc., Geneva, during a recent two-day sales conference here.

The announcement said the new mobile machine embodies an entirely different pneumatic engineering concept which allows it to operate with an efficient balance of free air, power and grain. Called "dynamic flow balance," the new pneumatics system is reported to provide increased grain moving speed and reduced operating costs.

"Heart of the increased moving capacity," the report said, "is a specially-designed 26-in. fan wheel. This, combined with a newly-engineered cyclone intake, large metering valve, automatic air regulator and a powerful engine and compressor, provides grain handling up to 3,000 bu. per hour to distances of 500 ft. or more."

Moving by air flow, the grain bypasses the fan and moves directly into the cyclone. The grain then rejoins the air flow through a metering valve and is moved to its destination.

The unit is available in two and three stage sizes. The two-stage machine is rated at approximately 20% more than current three-stage Vac-U-Vators. The new three-stage machine is said to nearly double the output of its three-stage contemporary, particularly in long conveying distances.

Cash Business Boosts Oilseed Meal Futures

MEMPHIS — Oilseed meal futures closed higher on the Memphis Board of Trade March 3 than the previous week.

After a series of declines, the market underwent a technical correction. Then it received a boost with improved cash oil meal business, only to fall off fractionally March 3, when demand virtually disappeared.

Trade interests, with inventories low, had bought cash oil meal as prices moved to what they considered bottom-level for the present.

Unrestricted soybean oil meal closed March 3 60¢ to $1.35 ton higher than on Feb. 24, Eastern Trunk Line soybean oil meal was 75¢ to $1.75 higher, bulk solvent cottonseed oil meal 25¢ to $2.70 higher and sacked old process cottonseed oil meal was unchanged to $4 higher.

Traded during the period were 11,300 tons of unrestricted soybean oil meal, 100 tons of Eastern Trunk Line soybean oil meal, and 200 tons of bulk solvent cottonseed oil meal.

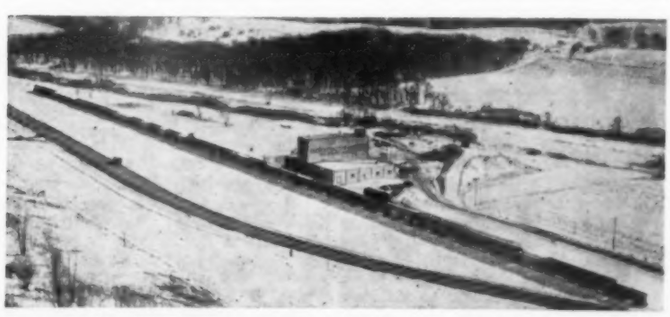
J. Louis Golden

WEST COAST MANAGER—Samuel M. Golden, president of the Amburgo Co., Inc., Philadelphia feed additive firm, has announced the appointment of his son, J. Louis Golden, Fresno, Cal., as manager of Amburgo's new west coast division. (Feedstuffs, Feb. 21.) The younger Mr. Golden attended Yale Graduate School and was in training several years as assistant manager and manager of the Amburgo demonstrational farm, New Britain, Pa.

Wirthmore Dealer Buys Sixth Grain Elevator

WALTHAM, MASS. — Wirthmore Feeds, Inc., Waltham, has announced that one of its dealers, R. L. Rathbun of Weyer Station, Ohio, has purchased the former Wolfe & Callihan Elevator at Helena, making it the sixth such facility to be acquired by Rathbun in recent months.

R. L. Rathbun Feed & Grain Co. also operates elevators at Bellevue, Clyde, Carrothers, Colby, and Flat Rock. In addition to its nationally-advertised mixed feeds, the dealership also manufactures its own brand, Big Giant, using Wirthmore concentrates.



TRAINLOAD SHIPMENT — Sargent Calcium Co., Alden, Iowa, recently shipped a trainload of calcium carbonate to feed manufacturers in Iowa and Minnesota. The first car was shipped from this plant two years ago. E. I. Sargent, president, said new equipment is being installed in the plant to take care of increased business. The company manufactures three grades of mixing calcium for the feed trade.

Farm Commodity-Feed Price Ratios

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
February, 1959	3.8	3.8	4.3	3.8	3.4	3.9	3.9	3.5	4.0	3.2
January, 1959	3.8	3.8	4.1	3.8	3.4	3.8	3.8	3.6	3.9	3.0
February, 1958	4.6	4.7	5.1	4.8	4.4	4.5	4.1	4.1	4.4	3.7
Average (1948-57)	5.7									
Average (Feb., 1948-57)	6.0									
Broilers:										
February, 1959	3.5	3.6	4.3	3.7	3.7	3.4	3.3	3.4	3.9	3.7
January, 1959	3.5	3.7	4.4	3.5	4.0	3.5	3.3	3.4	4.0	3.6
February, 1958	4.2	4.6	4.9	4.6	4.3	4.1	4.0	4.1	4.3	4.4
TURKEY-FEED—										
February, 1959	7.3	7.1	8.4	7.2	8.3	6.6	7.2	6.7	7.2	6.3
January, 1959	7.0	6.9	8.3	7.2	8.2	6.3	7.6	6.5	7.0	6.1
February, 1958	7.4	8.3	8.5	7.9	9.1	7.2	7.1	7.0	6.7	5.0
Average (1948-57)	8.6									
Average (Feb., 1948-57)	8.9									
EGG-FEED—										
February, 1959	10.4	9.9	10.9	10.1	10.0	11.0	11.5	10.7	10.3	9.9
January, 1959	10.7	10.1	11.6	10.2	10.0	11.5	12.5	12.0	10.7	9.7
February, 1958	11.0	12.0	11.7	10.6	10.5	11.8	12.2	11.1	10.9	9.9
Average (1948-57)	11.1									
Average (Feb., 1948-57)	10.4									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
February, 1959	1.43	1.42	1.33	1.51	1.68	1.61	1.43
January, 1959	1.47	1.44	1.34	1.52	1.63	1.65	1.48
February, 1958	1.47	1.42	1.39	1.61	1.68	1.59	1.51
Average (1948-57)	1.29						
Average (Feb., 1948-57)	1.30						
BUTTERFAT-FEED—							
February, 1959	23.7	...	19.4	26.7	...	16.2	18.2
January, 1959	23.9	...	19.9	27.2	...	16.7	19.1
February, 1958	24.8	...	20.8	27.8	...	16.1	19.6
Average (1948-57)	22.0						
Average (Feb., 1948-57)	22.4						

	U.S.	North Cent.
HOG-CORN—		
February, 1959	14.8	15.2
January, 1959	16.1	16.6
February, 1958	20.6	22.1
Average (1948-57)	13.4	13.7
Average (Feb., 1948-57)	13.4	13.8

NOTE: Ratios computed at mid-month by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISION

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

Pacific: Washington, Oregon, California.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Montana.

West: Combination of the two above.

South Central: Combination of the two above.

Cattle, Calf, Broiler Prices Drop in South

MACON, GA.—Cattle, calf and broiler prices dropped in the South last week. Cattle were down 50¢@$1 cwt., calves dropped $1@2 and broiler prices slipped 1@2¢ lb.

An exception to the lower cattle price trend was at Nashville, Tenn., where prices were strong to 50¢ higher for the week.

Southern hog prices wound up the week ending Feb. 27 with a slight gain on barrows and gilts, but at some markets sows and feeder pigs showed price declines up to 50¢. Movement of hogs to market increased last week, particularly in western Corn Belt areas, and overall was heaviest since 1956, according to the Agricultural Marketing Service.

The price level was about $5 below a year ago. Closing prices Feb. 27 for the bulk of sales of best weight butchers at leading Southern markets were $15.25@15.50 at Atlanta and Nashville, $15.75 at Louisville, $15@15.25 at Memphis, $15@15.50 at Montgomery and mostly $15 at Georgia, Florida and Alabama major plants.

Closing broiler prices Feb. 27 were largely 15¢ lb. in Georgia, Alabama and Mississippi, 15@16¢ in North Carolina, 16@17¢ in Virginia and 16@17½¢ in the Delmarva area. In Arkansas the range was 14@15¢.

Vealers moved slowly at Nashville, with prices off $1@2, but with heavier slaughter calves holding about steady. Utility grade slaughter cows sold actively at Georgia auction markets, with prices holding near steady at $19@21.50. The bulk of canner and cutter cows brought $15@19.

Good and choice steer calves brought mainly $28.25@35.50 at Montgomery. In the Florida area medium and good stocker calves over 250 lb. brought $25@30, with inferior and common calves bringing $20@26.50.

Merck 1958 Sales, Earnings Set Record

RAHWAY, N.J.—Sales and earnings of Merck & Co., Inc. and subsidiaries for 1958 were the best in the company's history, according to preliminary estimates announced recently by John T. Connor, president of Merck. Sales rose 11% and net income 20% over that of 1957.

Net sales were $206,600,000 in 1958, compared with $186,900,000 in 1957. Estimated net income was $27,700,000, compared with $23,100,000 the previous year.

Earnings per share of common stock were $2.64 in 1958 compared with $2.21 in 1957. The earnings per share in 1958 are after giving effect to the increased number of common shares outstanding as a result of preferred stock conversions following the redemption call of the $4.00 convertible second preferred stock in 1958.

Mr. Connor said the improved results were due mainly to the introduction of several new chemical and pharmaceutical products.

Daffin Produces New Towable Unit

LANCASTER, PA.—Besides the company's regular line of feed processing and handling equipment, the Daffin Manufacturing Co., Lancaster, has put into production a new mobile (towable) feed processing unit called "The Big Feeder," designed expressly for large commercial feed lots.

The company also announced that a second work shift was added in February in an effort to meet increasing production demands, principally on mobile feed mills. The announcement noted also that February marked the 10th anniversary of the first Daffin Feedmobile ever sold.

Loaded Feed Truck Damaged By Train

PORTLAND, ORE.—A two-ton truck and its load of feed and produce were badly damaged in Portland recently when struck by a 44-car Southern Pacific freight train.

Maurice J. Schorenberg, Silverton, Ore., feed dealer, told police he parked the truck on the main line track while he went into the office of a concentrate firm at the intersection. He heard the train whistle and dashed outside just as the diesel locomotive neared his vehicle.

A member of the train crew told police that the train was traveling about 20 miles an hour as it rounded a curve. He said the engineer "dynamited" (set the emergency brakes) his train upon seeing the truck but could not avoid hitting it.

Damage to the truck was estimated at $1,500. Damage to the load was not disclosed.

Pfizer Office Building To Be Constructed In New York City

NEW YORK—The major part of a 32-story office building to be constructed at 235 E. 42nd St. has been leased by Chas. Pfizer & Co., Inc., it was announced recently by J. William Stuart, Pfizer vice president. The structure, to be known as the Pfizer Building, will serve as world headquarters for the 110-year-old chemical and pharmaceutical firm and its subsidiary companies.

The new structure will contain 525,000 sq. ft. of floor space, the major portion of which will be designed to Pfizer specifications. Fully air-conditioned, the building will feature a glass and aluminum facade, an underfloor electrical duct system, high-speed automatic elevators and other elements of modern construction.

Situated one block west of United Nations headquarters, the new Pfizer building will house employees of the company's international division and domestic sales and service departments now at 800 2nd Ave. In addition, sales, accounting and financial functions now located in Brooklyn will move to the 42nd St. address when the offices are ready for occupancy in the spring of 1961.

"The establishment of a Pfizer world headquarters in one building stems from the company's growth and diversification in this country and abroad and provides a central location convenient to Pfizer operations in the New York metropolitan area," the announcement said.

These include the company's major plant in Brooklyn, the Pfizer eastern distribution center and regional sales offices in Clinton, N.J., and biochemical, microbiological and cancer research laboratories at Maywood, N.J.

Other Pfizer facilities in the U.S. include manufacturing and research operations at Groton, Conn., and Terre Haute, Ind., and distribution centers and regional sales offices in Chicago, San Francisco, Dallas, Chamblee (Atlanta), Ga., and Portland, Ore.

Overseas, Pfizer products are manufactured in 19 nations and sold through 35 branches and 70 distributorships in more than 100 countries.

Montana Snows Boost Supplemental Feeding

HELENA, MONT.—Heavy snow and below normal temperatures have necessitated the heaviest range livestock supplemental feeding of the winter in Montana recently.

However, the feed supplies have been generally adequate to maintain cattle and sheep in fair to good condition. Reports indicate that feed shortages may develop in some areas if severe winter weather persists.

The heavy snow caused some difficulty in moving feed to livestock in sections.

California Legislators Introduce Bills of Interest to Feed Men

SACRAMENTO, CAL.—Several new California bills of interest to feed manufacturers or allied industries have been introduced into the California State Legislature. The bills include the following:

Warehouse inspection fees are the subject of Assembly Bill 840. The measure would allow rapid repayment of loans from the general fund secured to administer warehouse inspection service. Under present law, the bureau of field crops can repay at 5% of collected fees.

New York dressed fowl would be exempted from provisions requiring the marketing, inspection and classifying of poultry carcasses and the marking of poultry meat containers from Nov. 1, 1959 to Nov. 1, 1963. This comes under Assembly Bill 34.

Another attempt is being made to establish the California Poultry Promotion Council. The California Legislature passed an enabling act in 1958, but the referendum among producers failed. A new bill introduced by Assemblyman McCollister of Marin County is identical to that of 1958, which is Assembly Bill 65.

Chicken poultry meat not grown in California, but which is sold in the state would be prohibited from being marked a "fresh" product unless the state in which it was grown is indicated thereon. This is Assembly Bill 66.

Any person operating an animal disease diagnostic laboratory, as well as a licensed veterinarian, must report infectious, contagious or transmissable diseases as specified in regulations of the director. This Senate Bill 138 also would prohibit moving livestock without a permit from slaughterhouse pens, yards, corrals, or similar places except directly into the slaughterhouse.

Livestock remedies would be labeled so that they include a statement which says "livestock remedy—not for human use." Further provisions of Senate Bill 203 call for a hazardous product to have the statement "hazardous" rather than "hazardous remedy."

PLANS PELLET PLANT

ROCK RAPIDS, IOWA — The Farmers Cooperative Exchange here has announced plans to build a $160,000 feed pelleting and processing plant.

MARKETS

(Continued from page 2)

the slow side, with no indications of improvement in the near future.

Broiler feed business showed a slight improvement this week, although the demand for broilers and fryers was reported to be on the slow side. Prices dropped 1¢ lb. to 15¢-16¢ f.o.b. farms.

The latter part of last week good buying interests in soybean meal and cottonseed meal caused prices to advance $2 to $3 ton. However, with no demand from the feed ingredients buyers, many offerings of resale meal were on the market this week at reduced prices. Many feed ingredients buyers feel that the major proteins are still on the high side, and should show some further signs of weaknesses before the heavy spring demand.

Barges are now in operation and delivering corn into Chattanooga, Tenn., and Guntersville, Ala., terminals in good supply. Demand for corn is only fair, resulting in prices dropping 2¢ bu. this week to $1.41 delivered. Cottonseed hulls continue to back up at the oil mills in the Mississippi Valley, but processors are not willing to lower their prices below $10 ton sacked as they feel there is not too much tied up in inventories. They feel there is a good possibility

that prices during the summer should improve.

Last week most of the citrus processors in Florida advanced their prices $2.50 ton, and asking price at the major processing plants is $37.50 per ton f.o.b. Some processors report that since they increased their prices they have not secured any new business.

Central States

Feed business is "not too bad" in the central states, according to feed manufacturers. The month of February generally was satisfactory, although a few reports of slow business were noted during the period. Some mixers said their February sales were as much as 10% ahead of the same month a year ago.

Prices of feeds have levelled off, observers reported, and as long as prices stay fairly stable it is believed a steady buying movement will be maintained. Poultry feeds, egg mashes and cattle feeds are holding up in volume. Turkey feeds are seasonally slow.

South Central

Feed sales volume held relatively steady this week. Hog feed demand was reported to be slowing, due mostly to heavy marketings during the last two months. Reversal in this slowing trend is expected late in March when the hog population is again on the increase.

Although the season is not far enough advanced for pig feed sales to offset the loss in hog feeds, sales so far indicate a substantial volume coming up. A quick pickup in mill operations depends mainly on the results of the chick starter promotions now being offered. Most plants are continuing with five-day runs, although a few cut off a day this week.

A sales manager ruefully commented that sales comparisons with a year ago are just beginning to reflect the big bulge in business that began in February of last year. The 10 or 11 straight increases chalked up make a difficult goal to shoot at this year, he said.

Ohio Valley

Although a definite upturn in sales of formula feeds appears to be developing in the Ohio Valley, it has not yet assumed sufficient volume to bring the market to a really active status. Area manufacturers report mild improvement in sales of starter feeds for both poultry and hogs. With the weather now showing definite signs of moderating, it is expected that sales of all types of starter feeds will increase steadily during coming weeks.

The warmer weather also was instrumental this week in causing a sharp uptrend in receipts of farm animals at area stockyards, with deliveries by farmers reported up 100% and more. But the market took the increased receipts in stride, with prices being maintained at very satisfactory levels.

Prices for eggs also held steady this week in a range of 24@27¢, but there was considerable fluctuation in poultry prices, because of offerings from outside areas.

Altogether, while the present situation is one of waiting for the return of spring weather, the outlook appears sufficiently favorable to justify considerable optimism on the part of feed manufacturers and retailers alike.

Pacific Northwest

Pacific Northwest feed ingredient prices last week followed an irregular trend with trade sources indicating that varying supply and demand conditions contributed to the situation. Trading on the whole was very slow with most buying interest confined to nearby needs.

While listings for some feed grains, fish meal and suncured alfalfa meal eased lower, advances in prices for soybean meal, whole corn and milo appeared to more than offset these reductions to the extent that the average change was slightly higher.

Despite the slow demand for ingredients, mixers reported at Seattle and Portland that volume of formula feed movement to dairy and poultry farms was well maintained at volume levels.

Wheat millfeed prices held firm despite a narrow demand since supplies were limited at most mills.

Soybean meal quotes were mostly $2.50 ton higher at the close of last week's trading while meat meal values were unchanged to $2.50 up. Corn listings gained 50¢ ton while milo prices gained 25¢.

Alfalfa meal listings were unchanged to as much as $3 ton lower while feed barley lost 50¢ to $1 ton with cottonseed meal values unchanged to $1 lower. Fish meal sold unchanged to 5¢ a protein unit lower.

Portland and Seattle alfalfa hay values held unchanged during the week despite a slackened demand on the part of coastal dairy and livestock feeders.

Portland live chicken prices last week declined 1 to 2¢ lb. to finish at 17¢ lb. for No. 1 birds.

Mountain States

Formula feed mill representatives in this area reported this week that their business has remained more or less even with the previous week's business. However, they admit that sales are up a good deal from a year ago at the same time.

Feeds getting the most demand in the past week have been cattle supplements. The representatives said purchases of the feeds have been for immediate sale more than for inventory buildup.

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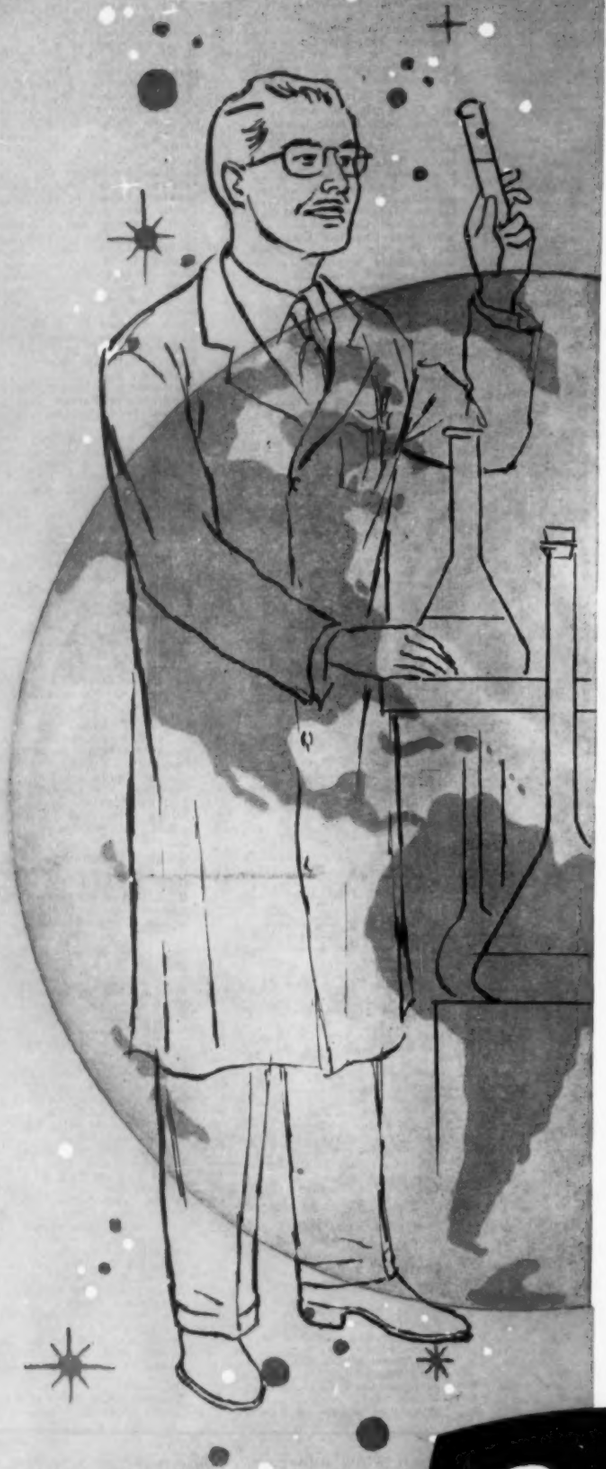

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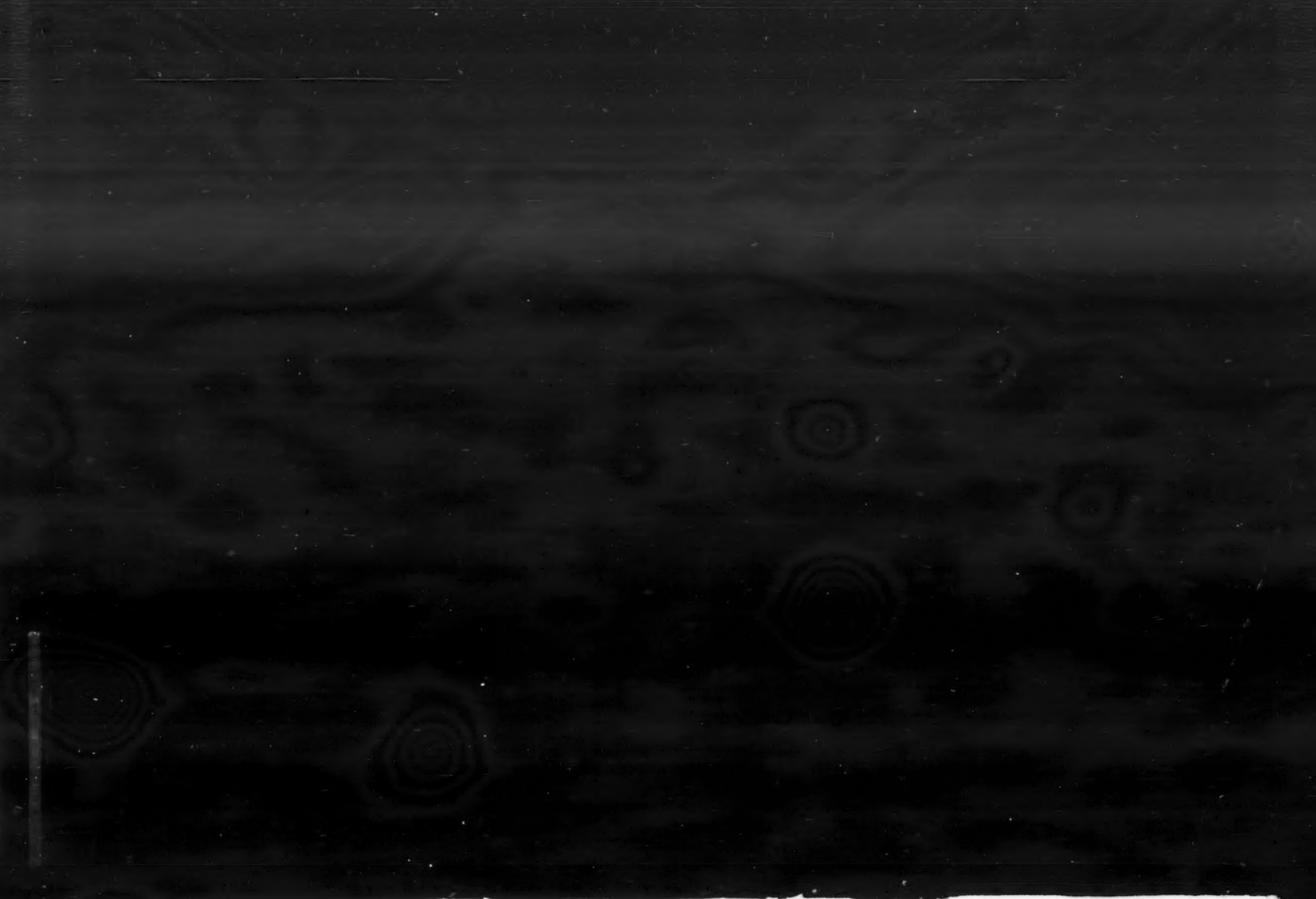
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